Background, Overview, and Analysis of Crop Insurance in Alberta: A Report Submitted to the Crop Insurance Review Committee, Hon. Charles Mayer, Chair

Allan Mussell, Ph.D.
Holly Mayer, M.Sc.
Cher Brethour, M.Sc.
Brent Ross
Kate Stiefelmeyer

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I ALBERTA CROP INSURANCE BACKGROUND AND OVERVIEW

All-risk crop insurance is a joint federal-provincial program operating under the Canadian Crop Insurance Act (1959). Currently, the Agriculture Financial Services Corporation (AFSC) is responsible for the operation and delivery of crop insurance to Alberta producers. It was formed in 1994 from the merger of the Alberta Hail and Crop Insurance Corporation and the Alberta Agricultural Development Corporation.

Throughout the past decade, three types of insurance programs were available to Alberta producers: all-risk crop insurance, straight hail insurance and revenue protection. The all-risk crop insurance program provides a hail endorsement option for an additional premium and several other benefits for no additional premium. The operation of these programs and the major changes made to them over the period 1990 to 1999 are described in detail below.

Revenue Protection

The gross revenue insurance program (GRIP) was introduced in 1991; in 1995 the vast majority of Alberta producers took advantage of the option to opt out of the program without penalty. GRIP was an add-on to all-risk crop insurance that provided producers with protection against low prices relative to long-term trends and yield protection above regular crop insurance levels. Also in 1995, the Farm Income Disaster Program (FIDP) was developed with the aim of providing income protection to farmers who experience a disastrous drop in income; FIDP remains in effect at this time.

All-risk Crop Insurance

The last crop insurance review brought about several major changes in the all-risk crop insurance program for the 1990 crop year, which are still in effect. The first was a change from 14 risk areas to 22 risk areas, to more accurately reflect production history and risks on a smaller area basis. Changes were also made to provide more individualized coverage and premium levels. On the coverage side, indexing was introduced. The new system originally allowed producers to remain on a general plan, or elect a personal plan whereby their production would be measured every year and coverage subsequently adjusted upward or downward based on the risk area yields relative to the individual's yields. The following year all producers were brought into the indexing system; many were 'grandfathered' to allow time for coverage levels to accurately reflect individual production capabilities. With regard to premium rates, surcharges were introduced where previously only discounts could be implemented based on a policyholder's claim experience.

The 1990 crop year was the first time an 80% coverage option was available, where previously the only options were 60% and 70% coverage levels. For the 1997 crop year a 50% coverage

level was introduced in response to producer requests for increased flexibility in the program. Hail endorsement is not available at this coverage level and producers pay only 20% of the total premium instead of 50% for the higher coverage levels. Separate coverage was also introduced in 1990 for crops grown on dryland and irrigated land, which meant that for producers with crops on both types of land production from one would no longer offset a loss on the other. Price options were also revised to provide a high and a low price option for grain and oilseed crops (already available for all other insurable crops) instead of only one price option. This feature was eliminated in 1991 with the introduction of GRIP and reinstated in 1996.

Insurable Perils

All-risk crop insurance offers coverage against the following types of natural perils:

- drought (except under irrigation)
- snow
- excess moisture
- insect infestations
- fire caused by lightning strike
- hail
- wind
- plant disease
- frost
- wildlife damage

Crops Insured Under All-risk Insurance

Crops eligible for all-risk crop insurance include the following, whether grown on dryland or irrigated land or both:

Red spring wheat**
Durum wheat**
Red winter wheat**
Soft white spring wheat**
Other wheat**
Oats**
Barley**
Mixed grain
Spring rye**
Fall rye**
Canola**
Spring triticale**
Winter triticale**
Flax**
Yellow mustard**
Brown mustard
Oriental mustard**
Sweet corn*
Rutabagas*
Carrots*
Cabbage*
Fresh beans*
Broccoli*
Cauliflower*
Cucumbers*
Pumpkins*
Winter Squash*
Onions*
Potatoes (processing, seed** and table)
Dry beans***
Grain corn
Alfalfa**
Pedigreed alfalfa seed
Strawberries
Sugar beets
Sunflowers
Field Peas**
Lentils
Faba Beans
Safflower
Pedigreed Timothy seed
Creeping red fescue seed (pedigreed and commercial)

*Grown for sale as fresh vegetables through the Fresh Vegetables Marketing Board.
** Crops that can be insured as pedigreed crops.
*** Dry beans under irrigation can be insured as a pedigreed crop.

How It Works

Crop insurance contracts are continuous; the policy stays in effect from one year to the next unless the producer or AFSC cancel it on or before April 30th for spring-seeded crops, and August 31st for fall-seeded crops. Contracts are issued to farmers, defined as someone who is engaged in the business of growing and harvesting a crop. This does not include a landlord who receives cash rent or a crop share.

All-risk crop insurance provides policy holders with a production guarantee on crop losses caused by the natural perils listed above. Once a producer decides to insure a crop, all acres of that crop on the farm must be insured – coverage cannot be purchased on a field by field basis. A policy holder is eligible for a claim if the average yield of a crop across all fields is lower than the insured production level. A poor quality crop, i.e. low grade, may also result in an eligible claim. Spot losses per se are not covered by all-risk insurance, however if a spot loss is significant enough to lower the overall yield below the insured level a claim would be made.

Coverage Level and Premium Rate Determination

Coverage for each crop type is set by risk area, of which there are 22 in Alberta, based on the 10 year production normal for the area. This risk area normal is calculated from the history of Crop Insurance policy holders only – non policyholders are not part of the determination of the area's average production. The risk area production normal is then combined with the individual coverage adjustment, which compares an individual producer's production history to the risk area over the same time period, to determine the producer's coverage level. This means that an individual farmer's experience and management style affects their own basic coverage level.

As of 1998 new policyholders can enter the program at an index level ranging from 0.8 to 1.2, based on the average individual index in their immediate area within a risk area. For the first three years of participation in the program, the policyholder's actual coverage levels can increase or decrease by a maximum of 5% from the adjustment for the previous year. Previously the coverage level for new policyholders was set at that of the risk area average (index of 1) for the first three years. Once the policyholder has three years of records with Crop Insurance, coverage adjustments are made to the nearest 1% with no limit on the year over year percent change in coverage levels.

From 1990 to 1994, soil productivity ratings (soil classes) were also used to adjust coverage levels for each crop within a risk area. Once the basic coverage level has been determined,

producers can select to insure each crop at 50%, 60%, 70% or 80% of the basic coverage level, and select a high or low price option for each crop. The price options are determined annually before the crop season and are intended to closely reflect the current year's market price. The combination of the above sets out the overall coverage level for each crop for each producer, or the maximum amount payable per acre.

Basic premium rates are calculated so that the program is actuarially sound, however there are several types of premium rate adjustments. A policyholder's claim experience can result in surcharges if their indemnities exceed premiums paid. Premium discounts are detailed in Table 1.1 below.

Table 1.1 Premium Discounts

Discount		Amount of Discount
Continuous participation		2%
Insuring all crops on farm		3%
Number of acres insured:	320 - 639	2%
	640 - 1280	4%
	> 1280	6%
Good claims experience (maximum)		38%
Early payment		5%

Determination of Indemnity

Harvested production plus the estimated production from any unharvested acres are added together; if the average yield is below the insured level, a payout will be triggered. The indemnity is calculated as the difference between the actual production average for all acres of a crop and the insured production level, multiplied by the per acre price option selected.

Price Election Levels

The price election levels for each insurable crop are intended to approximate the farm gate price for the crop year in which the crop is harvested. The price levels for the major crops are essentially forecasts determined by Agriculture and Agri-Food Canada economists in conjunction with the provincial crop insurance agencies. The backbone of the forecast is fundamental supply and demand analysis of the markets for each commodity. Some of the factors used in this analysis include Canadian Wheat Board Pool Return Outlooks, USDA acreage reports and forecasts,

futures prices, government programs in the United States and European Union, and crop conditions around the world. The Canada/US exchange rate is also taken into consideration, based on forecasts for the rate from the four major Canadian banks. The forecasted price is then adjusted for transportation costs to arrive at a farm gate price. Since transportation costs differ by province, a different price level is forecasted and set for each province. Price election levels for specialty crops are set provincially, using the same basic supply and demand analysis.

Premium and Coverage Adjustments

Premium Adjustments

Premiums are adjusted based on actual individual indemnity experience. The following 25 year moving average formula is used to calculate discount/surcharge factors:

Discount/surcharge factor=(individual cumulative loss/individual cumulative premium-1)(n-2)/25,

where n is the number of years in the program. The individual premium adjustment is the discount/surcharge factor +1.0. The maximum individual premium adjustment (discount or surcharge) is .38.

Coverage Adjustments

Individual coverage level (index) is set based on a producer's yield experience in the program relative to a peer group. The peer group has traditionally been the risk area average. Township averages are used to index new entrants for the first 3 years; after 3 years producers are indexed to the full risk area. The risk area average is the 10 year moving average, adjusted for technological change, with a standard deviation subtracted to remove outliers and exponential smoothing applied. The risk area average is lagged 1 year due to a lag in data collection from forced spring harvesting. If a producer's average yield exceeds the risk area average, his coverage level is larger than the risk area (index >1); if the yield is lower than the risk area average, the coverage level is lower than the risk area average (index <1). Annual adjustments to coverage are made based on the ratio of a producer's 10 year moving average to the risk area 10 year moving average. The producer's 10 year average is determined by the greater of the actual yield or the "cushioned" yield from each year. The cushioned yield is the risk area average, multiplied by the base coverage percentage (70% or 80% for most crops), multiplied by the producer's previous year yield index.

Producers with yields that are highly correlated with the risk area average should have a coverage index that is stable. Farms with yields not well correlated with the risk area average will have a coverage index that is regularly adjusted. For example, if the risk area average increased 5% in the most recent year, farms that also experienced a 5% increase in yield will have no coverage

index adjustment in that year. Farms with greater than 5% increase in yield will have an upward coverage adjustment, and those with less than a 5% increase in yield will have a downward coverage adjustment.

SPECIAL PROVISIONS UNDER ALL-RISK INSURANCE

Grade Adjustments

Grade adjustments are made when the grade of harvested production for certain crops is below the designated grade (See Appendix A for list of designated grades). Such a grade loss is taken into consideration in determining if an indemnity is payable and the amount of the indemnity. Grade adjustment factors are calculated annually based on Canadian Wheat Board initial prices or market price, as dictated by the crop in question, to determine the value of the crop adjusted for grade loss. If this value is below the coverage level (yield coverage per acre * price option selected per acre) an indemnity is triggered. This provision means that a high yielding crop of poor quality may trigger a claim, provided the adjusted production level is below the coverage level.

Hail Endorsement

Hail endorsement is an optional benefit of all-risk crop insurance available at the 60%, 70% and 80% coverage selection levels that provides spot loss protection against hail damage and accidental fire equal to the coverage level selected under basic crop insurance. Policyholders pay an additional premium equal to 40% of the straight hail insurance rate for hail endorsement. It is available on all insurable crops except vegetables for processing[1], alfalfa for processing, honey, and hay and pasture crops. Hail endorsement is only available when added to an all-risk insurance policy, and therefore must be selected by the crop insurance application deadline of April 30th. Combined indemnities for hail endorsement and production shortfall on any crop are limited to the policyholder's selected coverage level for the crop. Hail endorsement indemnities paid do not affect a producer's premium adjustments for all-risk crop insurance.

Corn Heat Unit Insurance

For the 2000 crop year insurance, corn heat unit insurance is available in certain areas as designated by AFSC for grain corn grown for silage. This product is available to producers who have an all-risk crop insurance contract and have selected a coverage level greater than 50%. Producers are insured for a straight dollar value per acre of their choosing and an indemnity will be paid out if corn heat units do not reach a certain level. The heat units will be determined by weather stations set up for this program in specific locations.

Unharvested (Snowed Under) Acreage Benefit

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[1] Vegetables for processing are presently being considered for hail endorsement.

The unharvested acreage benefit provides all-risk crop insurance policyholders with an advance payment on insured crops that remain unharvested after November 30 because of the onset of winter. AFSC determines a designated snowed under area after all unharvested acreage claims have been submitted and makes a payment for insured crops only. Policyholders with unharvested acres outside of the AFSC designated area have their yield potential determined by an adjuster, which is used to finalize the claim.

Before a payment is made, a 20% deductible on the total insured acres of a crop is assessed against the unharvested acres of that crop. If the criteria for a payment are met, an advance of 25% of the per acre dollar coverage (coverage level * price option) on the unharvested crop acres minus deductible acres would be paid. Outstanding premiums are deducted from the advance, and the advance is deducted from any further payments the policyholder is eligible for in the spring after the crop is harvested. However if the final payment in the spring is less than the advance, the remaining advance does not need to be repaid.

No payment is made if the following conditions apply: deductible acres are greater than the unharvested acres of a crop; AFSC determines that less than 10% of the surrounding cultivated acreage remains unharvested; an amount greater than the insured production level has already been harvested, or; the crop was not harvested due to an uninsured peril.

Unseeded Acreage Benefit

The unseeded acreage benefit compensates all-risk crop insurance policyholders at no additional premium for some of the direct and indirect costs associated with seeding preparation when seeding is not possible due to excess moisture. To qualify for the benefit, a producer must be in an area, designated by AFSC, where at least 10% of the eligible cultivated acres for seeding are left unseeded by June 20 due to excess moisture. Acres intended for silage and/or greenfeed; land that was hay or pasture the previous year, and; any acreage intended for spring seeded crops (insured and uninsured) are eligible for the unseeded acreage benefit. Unseeded acreage must be in a minimum of 8 acre blocks and a 5% deductible on all cultivated acres per quarter section is assessed. Each quarter section that has unseeded acreage on it will have the deductible and actual seeded acres calculated on it.

There are three levels of payment, each with different eligibility requirements. If no cultivation or chemical incorporation has taken place the producer is eligible for $20/acre. The $30/acre payment compensates for some direct costs of seeding preparation from cultivation, harrowing or chemical fallow. The highest payment of $50/acre is meant to compensate for pre-plant incorporation of fertilizer and/or herbicide. The compensation paid at any of the coverage levels cannot exceed the dollar coverage at the 50% coverage level and high price option for the predominant crop from the previous year. Unseeded acreage payments will also affect a producer's premium adjustments.

Crop Insurance Reseeding Benefit

The Reseeding Benefit provides an all-risk crop insurance policyholder with financial assistance to reseed insured acreage that has been damaged by insured perils early in the crop year. This benefit is available at no additional premium to the policyholder for each crop that is insured at the 60%, 70%, 80% or 90% (not the 50%) coverage level. Insurable perils under the reseeding benefit include flooding, snow, frost, hail, wind, insect infestations, poor germination due to drought, excessive rain causing soil crusting and plant disease. Management-related perils such as poor quality seed, seeding too early, weed infestation and improper seeding methods are not insurable.

Policyholders qualify for the reseeding benefit if crop insurance was elected on the original crop, which has been seeded, and they are able to reseed the intended acreage prior to seeding deadlines. Reseeding payments are set each year for each crop on a per acre basis. An unseeded acreage claim and a reseeding claim cannot be filed on the same piece of land.

The claim is paid based on the original insured crop, however a producer can reseed to any crop. The reseeded crop is insurable under all-risk crop insurance provided insurance was elected for that crop and it was seeded prior to the appropriate seeding deadline.
Reseeding benefit payments affect premium adjustments.

OTHER PROGRAMS

Waterfowl and Wildlife Damage Compensation

This program is not part of the all-risk crop insurance program, therefore any producer whose crop is damaged by waterfowl or big game wildlife can make a claim. Eligible crops include commercially grown cereal, oilseed and special crops that are insurable under all-risk crop insurance. The program is not available for grazing land or native pasture, or bales, stacks, granaries, bins or crops left exposed to wildlife damage due to poor management practices.

Compensation is paid based on the percentage of damage multiplied by 80% of the commercial value of the crop. Commercial value is determined by estimating the yield prior to damage, multiplied by the high Crop Insurance price option.

To qualify for the compensation, crops must be inspected by an adjuster, and must be either standing or in swaths. As well, at least a 10% crop loss must be assessed and a minimum $100 loss per crop calculated. Producers who carry all-risk crop insurance will have the waterfowl/wildlife claim deducted from any Crop Insurance payments.

Straight Hail Insurance

Straight hail insurance provides producers with spot loss coverage against hail damage and accidental fire damage. Anyone who has an interest in any insurable crop grown in Alberta

(producer, tenant, landlord, etc.) can take out straight hail insurance. Eligible crops can be insured for any dollar value up to the maximum level of insurance for that crop, and crops can be insured by individual fields or even partial acres of a field. Straight hail insurance can be purchased in addition to hail insurance sold by private companies and the hail endorsement option to all-risk crop insurance.

The straight hail program is funded completely by producer premiums, i.e. it is self-sufficient, with no government contributions to premiums or administration costs. Premiums are calculated by township, based on the historical loss experience of participants in the program and calculated as a percentage of the dollar value chosen for coverage. A basic rate is set for each township and individual crop rates can vary from 75% to 200% of the basic rate, depending on the risk involved. Three coverage levels are available: full coverage, 10% loss deductible and 25% loss deductible. The higher the deductible, the lower the premium is.

Losses are not paid when there is less than 10% damage to the crop and crops damaged more than 90% are paid out at the 100% level. Crops damaged between 70% and 90% receive a harvest allowance to compensate for the difficulty of harvesting badly damaged crops. If there is a surplus in the straight hail account at the end of the year AFSC will refund a portion of the policyholder premium. The size of the refund depends on the surplus remaining in the fund after all indemnities and administration expenses have been paid.

Forage Insurance

Forage insurance is production insurance against natural perils such as drought, excess moisture, hail, wind, frost, insect infestations, etc. on hay crops. It is a premium-based program that is separate from all-risk crop insurance. There are four coverage levels – 50%, 60%, 70% and 80%, and four price options - $30, $40, $50 or $72 per ton.

Coverage is established by estimating the 'normal' production capability for each risk area and then making individual coverage adjustments determined by comparing a producer's historical production to the surrounding area over the same time period. Producers can choose between a personal plan and a general plan for coverage determination. Under the personal plan production measurements are taken each year and coverage adjustments can go above or below the risk are average. The general plan requires production measurements only in claim years and coverage adjustments can go below the risk area average, but never above.

There are two crop categories - dryland hay and/or irrigated alfalfa, although a category may consist of more than one crop type. Losses are determined over the entire acreage of a producer's crop category, so production of one crop type may offset a production shortfall on another crop type in the same category. Production level is determined by averaging the weight of representative bales from the insured acreage.

CROP INSURANCE PROGRAMS IN OTHER PROVINCES

BRITISH COLUMBIA

The British Columbia Crop Insurance Program is administered under the direction of the Ministry of Agriculture, Food, and Fisheries, and is subsidized by the government. In the early 1990's the program was revised by the Ministry and is now known as the Basic Plus Program. The program offers a variety of coverage through a basic plan with an option to upgrade the level of coverage at an additional cost.

Coverage

The Basic Program covers up to 60% of the insured's average crop yield. An upgrade to the Basic Plus Program will ensure coverage of 70 or 80% of the insurable yield. The program also has an option of purchasing hail spot-loss protection. It program offers coverage for barley, canola, fall rye, field peas, oats, wheat, and other non-grain crops.

Insurable Perils

The plan allows for protection against drought, excessive moisture, frost, insect damage, disease infestation, frost, rain, snow, flood, hail, fire, wind, wildlife damage, and waterfowl damage.

Sum Insured Calculation

The Basic Crop Insurance package will value the loss of crop at 80% of its regional calculated price. Therefore,

Value of Crop Insurance = *60% of average crop production * (0.80 * regional calculated price)*

The Basic Plus Crop Insurance Package allows a Producer to choose a crop loss protection of 70 or 80% of the average crop production in his/her operation. It also values the loss of crop at 100% of its regional calculated price. Therefore,

Value of Crop Insurance = *chosen % of coverage * regional calculated price*

Premium Calculation

The Basic Crop Insurance Plan requires an annual premium payment of $100.00 plus $75.00 per crop to be insured, with additional payment related to the level of coverage chosen by the producer.

SASKATCHEWAN

The Saskatchewan Crop Insurance Program is under the direction of the Department of Agriculture and Food. This program offers multi-disaster insurance on 23 traditional crops, 4 non-traditional crops, and forages. The insurance program covers for loss of production, loss of quality, and unseeded acreage coverage. As well as the basic crop coverage there are a variety of options, these include, Spot-Loss Hail and Fire, Diversification, Organic Crop, Pedigreed Seed, and Irrigation Coverage.

Coverage

The Saskatchewan Crop Insurance program will insure only those crops that are suitable for local growing conditions. A complete list of these crops can be found in Saskatchewan Agriculture and Food's publications, *Varieties of Grain Crops 2000.*

Insurable Perils

This plan allows for protection against drought, flood, hail, wind, frost, lightning, accidental fire, excessive rain, snow, hurricane, tornado, wildlife, waterfowl, insects, and plant disease. Although, if loss is found to be related to poor management, for example, poor seed quality, chemical drift, or weed control, then the coverage may be reduced or rejected.

Sum Insured Calculation

With this program there is a guaranteed production amount based on the coverage option chosen by the producer, and the average yield for the crop insured. This average yield is based on the combined annual production of the crops verified by the Saskatchewan Crop Insurance. The program then compensates the producer for yields below the guaranteed production amount. The indemnity paid is based on the yield loss and the insured price. This insured price is a forecast price set by Agriculture and Agri-Food Canada. The producer can choose the Variable Price Option which provides increased coverage if crop prices improve; it fluctuates up to a maximum of 25% above the set insured price, but will never fluctuate below the insured price. If producers choose this option, their coverage and premiums are adjusted accordingly.

Premium Calculation

Base coverage is 50% of the average yield and is shared by the governments (90%) and the producer (10%). The producer has the option to buy coverage up to 60, 70 or 80%, this coverage is shared by the governments (60%) and the producer (40%). The premium rates are calculated based on the type of crop and its loss risk and forage risk area.

MANITOBA

The Manitoba Crop Insurance Corporation, under the direction of the Department of Agriculture and Food, is in charge of the administration of the Crop Insurance Program. All crops are

covered in the same manner if they are included in the 45 insurable crops under the Crop Insurance Program. The purpose of the program is to provide financial protection against uncontrollable natural hazards detrimental to a producer's crop value. There are also additional options of unseeded land insurance, spot-loss hail insurance, and wildlife damage compensation. The government of Canada and the government of Manitoba fund all of the premiums for the 50% coverage level, and half of the additional premiums if the producer chooses to increase the coverage level. An administration fee of $0.20 per acre insured is charged to the producer. A producer can choose to have individual crops insured at different coverage levels. Manitoba is divided into various risk-level areas, the coverage and premium determination are based on the level of risk assessed in these certain areas.

Coverage

The Manitoba Crop Insurance Corporation insures 45 crops under the program, including barley, canola, corn, flax, oats, potatoes, soybeans, wheat.

Insurable Perils

The program allows for protection against drought, excess moisture, excess rainfall, flood, frost, hail, fire, excess heat, wind, wildlife, and waterfowl. Causes of loss that are in the control of the producer are not covered by the plan.

Sum Insured Calculation

This is calculated as the difference (shortfall) between the total coverage of the insured and the total production of the farm, multiplied by the established value of the insured crop. The Manitoba Crop Insurance Corporation establishes the unit value of the insured crop by one of three methods:

1. Expected market value
2. Five year average of market prices
3. Cost of production per unit at average yield (forage, horticultural, and seed crops)

Premium

The premiums are shared by the producer, the government of Canada, and the government of Manitoba. At a coverage level of 50%, the costs are borne entirely by governments; the federal government share is 60% and the province of Manitoba share is 40%. At a coverage levels above 50%, premium costs are split between the federal government (25%), the province of Manitoba (25%), and the producers (50%).

ONTARIO

Agricorp, under the direction of the Ontario Ministry of Agriculture, Food and Rural Affairs is responsible for the administration and development of the Ontario crop insurance program. Agricorp provides innovative agricultural insurance and customized consulting services designed to strengthen Ontario's agricultural and food industry. The Government of Canada, the province of Ontario, and the Producers all share in the funding of the program. Producers pay half the premium amount and the other half is split equally between the 2 governments.

Coverage

There are currently 53 commercially grown crops that are covered by the Ontario crop insurance plan. Each eligible crop has its own unique crop coverage plan, although all sum insured calculations are similar and premiums for all crops are divided between the producers and governments in the same manner.

Insured Perils

The program allows for protection against drought, flood, wind, hail, frost, wildlife, excessive heat, excessive rainfall, insect infestation, frost, and plant disease.

Coverage Levels, Costs, and Unseeded Acreage Benefit of Various Crops

Unseeded Acreage Benefit (USAB): provides compensation if an insured peril, excluding drought, prevents a large number of producers within an area from planting or seeding part or all of the intended acreage.

Oats, Barley, Winter Barley, Feed Spring Wheat, Mixed Grain

Coverage Level (%)	Premium Rate	Claim Price
70	$2.00/ac	Float
75	$2.45/ac	Float
80	$3.00/ac	Float
85	$3.65/ac	Float

USAB value for feed red spring wheat is $0.042/pound. There is also a reseeding benefit of $40.00/acre if the crop must be reseeded.

Hard Red Spring Wheat

Coverage Level	Premium Rate	Claim Price
70	$3.45/ac	Float
75	$4.40/ac	Float
80	$5.50/ac	Float
85	$6.60/ac	Float

USAB value for hard red spring wheat is $4.49/bushel and a maximum of $54.00/acre is paid as a reseeding benefit.

Potatoes

Coverage Level (%)	Premium Rate	Claim Price
70	$38.55	$7/cwt
75	$48.00	$7/cwt
80	$58.80	$7/cwt

USAB does not apply to potatoes; instead, potatoes have a Reseeding Benefit of $395.00/acre (maximum) if producers must reseed their crop.

Green Peas

Coverage	Level		
Total Production Coverage	Separate Harvest Coverage	Customer Premium Rate	Claim Price
80%	73.5%	$18.60/acre	Shortfall in revenue. Insured on a $ value/acre basis

USAB does not apply to green peas, although they have a reseeding benefit of with a maximum of $240.00/acre and a by-passed acreage benefit of a maximum of $210.00/acre. The By-Passed Acreage is acreage that was suitable for processing but because of an insurable peril could not be harvested. Green Peas are also covered by Separate Harvest Coverage that provides a producer with individual guarantees for each harvesting period, so that if there are three harvesting periods, the producer will have three guarantees. The harvested production from a high yielding harvest period will not offset the low yield from a low yielding harvest period.

Sugar Beets

Coverage Level (%)	Premium Rate	Claim Price
70	$13.40	Processor Price
75	$16.10	Processor Price
80	$19.15	Processor Price

USAB does not apply to sugar beets but there is a reseeding benefit with a maximum of $70.00/acre if reseeding is necessary.

Spring and Winter Canola

Coverage Level (%)	Premium Rate	Claim Price
70	$4.05/ac	Float
75	$4.95/ac	Float
80	$6.05/ac	Float

The USAB value for canola is $0.129/pound. There is also a maximum reseeding benefit of $40.00/acre.

Sum Insured Calculation

There are two components to this calculation. The first is the guaranteed amount of production and the second is the total value of the crop insurance.

Guaranteed Production = *Average Farm Yield * Coverage Level*

Average Farm Yield is a 5 – 10 year average of the yield per crop. New insureds will be assigned the 5 yr. AFY based on the surrounding AFY's, then after each subsequent year of production one year's actual yield from the producer's records will replace one of the given yields until after 5 years the AFY is completely the producer's own yield. Once a 5 year AFY is determined, the yields in years 6 – 10 are added on to the AFY to determine a 10 year AFY. Then in the eleventh year, the 1st year is deleted from the average so that the producer remains with a 10 year rolling average of the most current years.

The coverage level used in this calculation is the one that is chosen and the corresponding premiums paid by the producer.

Value of Crop Insurance = *Guaranteed Production * Acreage Insured * Claim Price*

Premium Calculation

Minimum premium rates on all crops are $25.00, other than corn and sugar beets, which are $100.00 each. The premium payments for all crops are split the same way. The producers are responsible for 50% of the premium rate, while the Government of Canada and the Province of Ontario equally split the other half leaving them responsible for 25% each.

QUEBEC

The Quebec Crop Insurance Program is administered by the Regie des Assurances Agricoles under the supervision of the Province of Quebec. The Regie des Assurances Agricoles offers producers a variety of insurance programs to choose from. The Federal Government, government of Quebec, and the producers all share in the funding of the program. The producers pay half of the premium, and the other half is divided equally between the two governments. The Regie des Assurances Agricoles provides 2 basic crop insurance programs: a collective crop insurance program and an individualized program.

COLLECTIVE CROP INSURANCE

In this program, producers are grouped into geographical zones. Coverage is offered against the loss of the average yield estimated for the whole zone, and damage appraisal is made collectively for all farms in the zone. The objective of this program is to police the degradation of insurance programs by high risk producers and result in higher premiums for all. This program protects the Regie from adverse selection and the threat of paying out high levels of compensation.

Coverage

Insurable crops include grain corn, oats, spring wheat, hay (feed needs option), hay (commercial option), mixed grains, corn silage, and barley.

Coverage Rates

For all crops other than hay, 80% of the total insurable yield is covered by the program; hay producers may choose from 70,75,80, or 85% coverage. Total insurable yield is calculated by the probable yield based on the zone average multiplied by the number of insurable units.

Insurable Perils

This program allows for protection against wild animals including birds, floods, excessive wind, excessive rain, excessive humidity, excessive heat, frost, hail, insect or disease infestations, snow, hurricane, and drought. In the case of hay, corn silage and spring cereals this program also protects against ice formation in the soil or frost during the previous November to April period. There are also spot loss coverage risks which are protected under this program including, wild animals and birds except those protected by the Wildfowl Crop Dmamage Protection and Compensation program of the Canada-Quebec agreement. Also covered by the spot-loss program are floods, hail, insect and plant disease infestations, snow, and hurricanes. Frost that damages corn silage is also covered, this frost must occur by certain dates around September, this date is determined by the geographical area insured.

Compensation

Zone Risks - Compensation is paid when it is determined that the average yield in a geographical area is less than the established average yield, and that the loss of this yield is greater than the deductible, 20% for all crops except hay which depends upon the selected coverage level.
Spot-Loss Risks – Compensation is paid when damage occurs which is greater than the deductible.

Premium Calculation

The funding for the premiums is divided among the producers, the Federal government, and the Province of Quebec. The producers pay half of the premium, and the other half is split equally between the 2 governments, giving them 25% each to contribute.

Individual crop insurance

This program offered by the Regie des Assurances Agricoles allows producers to set coverage and premiums based on their individual records.

Coverage

Insurable crops in this program include oats, spring wheat, canola, fava beans, field beans, grain corn, barley, dried peas, buckwheat, soybeans, and potatoes. Barley, oats, and spring wheat are covered both for when they are cultivated for grain and for seeds.

Coverage Levels

For oats, barley, and spring wheat grown for seed, crops are covered to 80% of the total insurable yield. Potatoes are also covered to 80% of their total insurable yield, potato producers have 2 types of plans to choose from. Plan A protects against losses in the field and Plan B protects against losses in the field and in storage. Producers are given a choice, on all other covered crops including oats, barley, and spring wheat cultivated for grain, of a coverage level of 60, 70, or 80% of the total insurable yield.

Insurable Perils

This program allows for the protection against wildlife and bird damage, floods, excessive wind, excessive rain, excessive heat, excessive humidity, frost, hail, insect and plant disease infestations, snow, hurricanes, and drought.

Compensation

Drop in Yield – When damage that occurs is larger than the insured's deductible.

*Compensation = Total Insurable Yield * Coverage level – Actual Yield * Unit Price*

*Total Insurable Yield = Probable Yield * Insured Units*

-probable yield is expressed in kg/hectare at 15% moisture (10% for canola)

Abandonment Coverage – Abandonment may take place any time during the season as long as authorization is given by the Regie. The yield levels observed must be lower than the established yield levels that allow abandonment of a crop.

*Compensation = Total Insurable Yield * Coverage Level – Actual Yield * Unit Price*

Downgrading (in the case of crops grown for seed) – When the intended grade level listed in the insurance policy is not obtained

Compensation = Total Insured Value – Dollar value of the total crop

Premium Calculation

The funding for the premiums is divided among the producers, the Federal government, and the Province of Quebec. The producers pay half of the premium, and the other half is split equally between the 2 governments, giving them 25% each to contribute.

NEW BRUNSWICK

The New Brunswick Crop Insurance Commission, under the direction of the Department of Agriculture and Rural Development, is responsible for the administration of the crop insurance program in New Brunswick. Funding for the program comes from three levels. The Government of Canada, the Province of New Brunswick, and the Producers, all share in the funding depending on the level of coverage chosen by the Producer.

Coverage Level (%)	Federal Share (%)	N.B. Share (%)	Producer Share (%)
50	50	50	0
65	25	25	50
80	10	10	80

The crop insurance program is administered differently for each commodity.

POTATOES

Coverage

Producers are eligible for coverage on all land owned or used to produce potatoes or seed potatoes.

Insurable Perils

This plan allows for protection against excessive moisture or heat, drought, snow, frost, hail, hollow heart, growth cracks, wind, insect infestation, and plant disease for seed potato crops.

Sum Insured Calculation

This calculation is the product of three separate components – the producer's chosen percentage of probable yield, the insured acreage of that variety, and the unit price. The Commission establishes a probable yield of potatoes in hundred weight per acre for each variety of potato for each applicant. The insured acreage is declared in the insured's application unless otherwise stated by the Commission. The unit price is the price for each variety of potatoes determined by the Commission before April 1st in each crop year.

Value of Crop Insurance = *Chosen % of Probable Yield * Insured Acreage * Unit Price*

Premium Calculation

The Commission determines the basic premium rate for each crop based on the estimated future losses for the crop. The Commission may also determine a premium adjustment value for each applicant who had crop insurance in a previous year, based on the following formula.

$$\text{Premium Adjustment} = \frac{(ILR - 1) * n}{(n + 20)} + 1.00$$

Where: *ILR* is the insured's loss ratio
n is the number of years the applicant has been insured

The adjustment is never greater than 1.50 or less that 0.50

GRAINS

Coverage

All grain producers are eligible for coverage on all grains that are grown on land owned or used to produce grain. Under this plan 'grain' means wheat, barley, oats, mixed grain or soybeans grown for use as feed grain or wheat, barley, or oats used as pedigreed seed grain.

Insurable Perils

This plan allows for protection against excessive moisture, drought, snow, frost, flood, hail, wind, wildlife, insect infestation, and plant disease for grain seed crops.

Sum Insured Calculation

This calculation is the product of three separate components – the insured's chosen percentage of probable yield, the insured acreage of that variety, and the unit price. The Commission establishes a probable yield of grain in pounds per acre for each applicant. Each type of grain has an individual probable yield. The insured acreage is declared in the insured's application unless otherwise stated by the Commission. The unit price is the price for each variety of potatoes determined by the Commission before April 1st in each crop year.

Value of Crop Insurance = *Chosen % of Probable Yield* * *Insured Acreage* * *Unit Price*

Premium Calculation

The Commission determines the basic premium rate for each crop based on the estimated future losses of that crop. The Commission may also determine a premium adjustment value for each applicant who has had crop insurance in a previous year, with the premium adjustment calculated using the same formula and bounds as in potatoes.

NOVA SCOTIA

The Nova Scotia Crop & Livestock Insurance Commission, under the direction of the Department of Agriculture and Marketing, is responsible for the administration the crop insurance program in Nova Scotia. Funding for the program is sourced from three levels. The Government of Canada and the Province of Nova Scotia provide financial assistance to the Insurance Program by each contributing 25% of the premium and 50% of the administration costs. Policyholders fund the remainder of the premium cost.

PEA & BEAN INSURANCE PLAN

Coverage

All processing peas and beans grown under contract between a grower and a processor are eligible for coverage. For purposes of this plan all contract peas and beans must be insured.

Insurable Perils

This plan allows for protection against drought, frost, hail, wind, excess moisture, insect infestation, plant disease and adverse weather for pea and bean crops.

Sum Insured Calculation

This calculation is comprised of three separate components – the average insurable yield, the production guarantee, and the established price. The crop insurance program uses an average insurable yield that is designed to reflect crop management on an individual's farm. The average yield is based on 10 years of yield records, which are indexed to industry averages for the same years. When production records are not available, the program calls for industry averages to be used. Yield records are buffered to +/- 30% of the indexed industry average.

The second component is the production guarantee calculation. Under the plan the grower is guaranteed 80% of the their average insurable yield.

*Production Guarantee = Average Insurable Yield * Percent Coverage * Area Seeded*

The final component in determining the value of the insurance is the price. Since both peas and beans are grown under contract, the established price is based on the current year's contract price. Therefore, the value of the crop insurance under the Pea and Bean Insurance Plan can be calculated as follows:

Value of Crop Insurance = Production Guarantee * Established Price

Premium Calculation

The policyholder is responsible for 50% of the premium. The premium rate is set each year for each crop. This rate is then adjusted by giving a discount when the insured's total claims paid is less than total premium paid, or by adding a surcharge when total claims paid is greater.

SPRING GRAIN INSURANCE PLAN

Coverage

Crop insurance coverage is compulsory for all area seeded to Spring Grain. Included under the classification are the following crops: barley, oats, mixed grain, feed wheat and milling wheat.

Insurable Perils

This plan allows for protection against drought, frost, hail, wind, excess moisture, insect infestation, plant disease and wildlife for spring grains.

Sum Insured Calculation

This calculation is comprised of three separate components – the average insurable yield, the production guarantee, and the established price. The crop insurance program uses an average insurable yield that is designed to reflect crop management on an individual's farm. The average yield is based on 10 years of yield records, which are indexed to industry averages for the same years. When production records are not available, industry averages are used. Yield records are buffered to +/- 30% of the indexed industry average.

The second component is the production guarantee calculation. Under the plan, two guaranteed coverage levels of 70% or 80% are available to the grower.

Production Guarantee = *Average Insurable Yield* * *Percent Coverage* * *Area Seeded*

The final component in determining the value of the insurance is the price. The grower has the option of selecting one of three unit prices – low, medium or high. This unit value, which is set each crop year, is then used to calculate the value of the crop insurance under the Spring Grain Insurance Plan using the following formula:

Value of Crop Insurance = *Production Guarantee* * *Unit Price*

Premium Calculation

The policyholder is responsible for 50% of the premium. The premium rates are set each crop year for the various crops and coverage levels. This rate is then adjusted by giving a discount when the insured's total claims paid is less than total premium paid, or by adding a surcharge when total claims paid is greater.

POTATO INSURANCE PLAN

Coverage

All processing potatoes grown under contract between a grower and a processor are eligible for coverage. For purposes of this plan all contract potatoes must be insured. Seed and table stock potatoes are also eligible for crop insurance.

Insurable Perils

This plan allows for protection against drought, frost, hail, wind, excess moisture, insect infestation, plant disease and wildlife damage.

Sum Insured Calculation

This calculation is comprised of three separate components – the average insurable yield, the production guarantee, and the established price. The crop insurance program uses an average insurable yield that is designed to reflect crop management on an individual's farm. The average yield is based on 10 years of yield records, which are indexed to industry averages for the same years. When production records are not available, the program calls for industry averages to be used. Yield records are buffered to +/- 30% of the indexed industry average.

The second component is the production guarantee calculation. Under the plan, guaranteed coverage levels of 70% or 80% of insurable yield are available to the grower.

Production Guarantee = *Average Insurable Yield* * *Percent Coverage* * *Area Seeded*

The final component in determining the value of the insurance is the price. The grower has the option of selecting one of three unit prices – low, medium or high. This unit value, which is set each crop year, is then used to calculate the value of the crop insurance under the Spring Grain Insurance Plan using the following formula:

Value of Crop Insurance = *Production Guarantee* * *Unit Price*

In the case of seed and table stock potatoes, insurable values are based on verifiable producer records.

Premium Calculation

The policyholder is responsible for 50% of the premium. The premium rates for processing potatoes are set each crop year for the various coverage levels. This rate is then adjusted by giving a discount when the insured's total claims paid is less than total premium paid, or by adding a surcharge when total claims paid is greater.

GRAIN INSURANCE PLAN

Coverage

Compulsory crop insurance is provided for feed wheat, milling wheat and rye.

Insurable Perils

This plan allows for protection against drought, frost, hail, wind, excess moisture, insect infestation, plant disease, wildlife and winter kill for winter grains.

Sum Insured Calculation

This calculation is comprised of three separate components – the average insurable yield, the production guarantee, and the established price. The crop insurance program uses an average insurable yield that is designed to reflect crop management on an individual's farm. The average yield is based on 10 years of yield records, which are indexed to industry averages for the same years. When production records are not available, the program calls for industry averages to be used. Yield records are buffered to +/- 30% of the indexed industry average.

The second component is the production guarantee calculation. Under the plan, two guaranteed coverage levels, as a percentage of their average insurable yield, are available to the grower, 70% or 80%.

Production Guarantee = *Average Insurable Yield * Percent Coverage * Area Seeded*

The final component in determining the value of the insurance is the price. The grower has the option of selecting one of three unit prices – low, medium or high. This unit value, which is set each crop year, is then used to calculate the value of the crop insurance under the Spring Grain Insurance Plan using the following formula:

Value of Crop Insurance = *Production Guarantee * Unit Price*

Premium Calculation

The policyholder is responsible for 50% of the premium. The premium rates for winter grains are set each crop year for the various crops and coverage levels. This base rate is then adjusted by giving a discount when the insured's total claims paid is less than total premium paid, or by adding a surcharge when total claims paid is greater.

PRINCE EDWARD ISLAND

The Prince Edward Island Agricultural Insurance Corporation, together with the government of Prince Edward Island, administers the PEI crop insurance program. The intent of the program is to provide insurance against a loss of production on the designated insurable crops.

Coverage

The following crops are insurable crops under the PEI crop insurance program:
All types and varieties of potatoes, all spring cereal grains, all types and varieties of edible beans, tobacco, all types and varieties of cole crops, rutabagas, all winter grain cereals, all protein feed crops, grain corn, milling wheat, and field peppers.

Insurable Perils

The PEI crop insurance program protects against the loss of crops due to insect infestation and plant disease, hail, frost, drought, excessive moisture, wind, and any other unavoidable loss due to adverse weather conditions beyond the control of the insured. There are also insured perils that apply to individual crop varieties, for example, the program insures against Potato Ring Rot.

Sum Insured Calculation

The sum-insured calculation is a combination of three separate calculations, the probable yield, guaranteed acreage, and the value of the crops insured.

Probable Yield = $\frac{\textit{total production of crops for all eligible years}}{\textit{Total acres grown for all eligible years}}$

If the insured does not have data for a sufficient number of years, then a provincial benchmark statistic is used to calculate the probable yield, until the insured has enough years to use for the calculation.

Guaranteed Acreage= *Probable Yield * Premium Coverage Rate chosen by Producer*
The Producer has a variety of coverage rates to choose from:

1) 70% coverage for those crops not previously insured or insured for less than 10 years		
2) 85% coverage for crops insured under Schedule A Part XI, provided the primary crop is less than 65% of the total probable yield, AND		
For all other crops – at the insured's option		
i) 70,75,80,85,or 90% coverage if premium load is 9% or less	ii)70,75, or 80% coverage if premium load is greater than 9%	iii) 60% for potato crops

Value of Crop Insurance = *Guaranteed Acreage * Value of crop*

The value of the crop will be determined by the PEI Agricultural Insurance Corporation, and will reflect either the market value of the crop, or a price predetermined at the beginning of the insured period.

Premium Calculation

The insured is responsible for 50% of the premium rate. The other 50% is divided by the Federal and Provincial government. The amount paid is directly related to the amount of coverage chosen by the insured.

CROP INSURANCE PROGRAMS IN THE UNITED STATES

The Federal Crop Insurance Corporation (FCIC), which is overseen by the Risk Management Agency (RMA) of the United States Department of Agriculture, underwrites crop insurance policies for more than 60 crops in the United States. Crop insurance policies are sold and serviced in the US by private insurance companies, while the government pays for the private sector delivery cost.

There are 18 insurance companies in the US that sell insurance for the federal government at a 24% commission rate. Reinsurance agreements (cooperative financial assistance agreements) exist between FCIC and the commercial insurance brokers. The federal government acts as the reinsurer, in which the insurance company provides the government with the premium in exchange for the government agreement to assume the liability for the coverage. There are three types of reinsurance pools that crop insurance companies can use to protect themselves; 1) Commercial Fund, in which 50% of the risk is assumed by the government (company gives government 50% of the net premium in exchange for the associated liability), Development Funds (65% of the risk assumed by the government) and Assigned Risk (80% of the risk assumed by the government). The Assigned Risk pool is generally where the insurance companies put their riskiest customers.

To encourage participation in the expanded crop insurance program, the 1980 Federal Crop Insurance Act authorized a subsidy level equal to 30 percent of the crop insurance premium limited to the dollar amount at the 65 percent coverage. This subsidy level remains in place today. For example, if the premium costs of 65 percent coverage was $8 per acre, the subsidy would be $2.40 per acre. However, should the cost of 75 percent coverage be $14 per acre, the subsidy remains at $2.40 per acre. The only thing that changes is the level of subsidy as a percentage of cost according to coverage and price.

There are three main types of crop coverage in the US: yield based insurance coverage, revenue insurance plans and policy endorsements. The following is a description of the types of crop insurance available and the specific policies that are available for barley, canola, wheat, oats, flax, peas (also field peas), potatoes and sugar beats, for comparison purposes.

Yield-based (Actual Production History (APH)) Insurance Coverage

Multiple Peril Crop Insurance (MPCI): These policies insure producers against losses due to natural causes such as drought, excessive moisture, hail, wind, frost, insects, and disease.

Coverage is available on over 76[2] crops in primary production areas throughout the United States. The farmer selects the amount of average yield he or she wishes to insure; from 50 to 85 percent .

The yield guarantee is the historical actual production history (APH) yield times the level of coverage, times the insured acreage, times the insured's share. The APH yield is determined from producer production records for a minimum of 4, up to 10 consecutive crop years. For producers who provide less than 4 years of actual yields, variable Transitional "T" Yields are used to complete the 4-year database. However, the approved APH yield for producers who elect not to supply records is limited to 65 percent of the applicable "T" Yield for the first year the producer is insured.

The farmer also selects the percent of the predicted price he or she wants to insure; between 55 and 100 percent of the crop price established annually by RMA. If the harvest is less than the yield insured, the farmer is paid an indemnity based on the difference. Indemnities are calculated by multiplying this difference by the insured percentage of the established price selected when crop insurance was purchased.

Perceived Benefits

The perceived benefits of Multiple Peril Crop Insurance include cash-flow protection, good loan collateral, added confidence when developing crop marketing plans, stability for long-term business plans and family security. The Government shares in the premium costs.

Group Risk Plan (GRP): The Group Risk Plan insurance is designed as a risk management tool to insure against widespread loss of production of the insured crop in a county. These policies use a county index as the basis for determining a loss. When the county yield for the insured crop, as determined by the National Agricultural Statistics Service (NASS), falls below the trigger level chosen by the farmer, an indemnity is paid. Payments are based on county averages rather than the individual farmer's loss records. Yield levels are available for up to 90 percent of the expected county yield. GRP protection involves less paperwork and costs less than the farm-level coverage described above. However, individual crop losses may not be covered if the county yield does not suffer a similar level of loss. This type of insurance is most often selected by farmers whose crop losses typically follow the county pattern.

GRP is a departure from traditional approaches to crop insurance protection, with less paperwork and generally less cost than Multiple Peril Crop Insurance (MPCI). The policy was developed on the basis that when an entire county's crop yield is low, most farmers in that county will also have low yields.

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[2]Crops covered by MPCI are as follows: almonds, apples, beans (canning and processing) canola, citrus, citrus trees, corn, grain sorghum, soybeans, upland cotton, extra long staple cotton, cranberries, dry beans, figs, Florida fruit trees, millet, nursery, peaches, peanuts, pears, peas, peppers, plums, popcorn, potatoes, prunes, raisins, rice, safflower, wheat, barley, oats, rye, flax, stone fruit, sugar beets, sugarcane, sunflower seeds, sweet corn (canning and freezing, and fresh market) tobacco, tomatoes(canning and processing), tomatoes (fresh market and walnuts).

Producers must choose one coverage level for each crop and county combination. The grower selects the dollar amount of protection per acre and one of the five coverage levels (70, 75, 80, 85, or 90 percent) of the Federal Crop Insurance Corporation expected county yield.

The expected county yield used for GRP is calculated using many years of county data from the National Agricultural Statistics Service (NASS) with an adjustment for the yield trend.

Indemnities are paid when the NASS county yield for the county falls below the "trigger yield." The expected county yield is multiplied by the selected coverage level. Indemnity payments are made about six months after harvest of the crop.

Perceived Benefits of GRP

- GRP offers catastrophic protection and may cost less than MPCI.
- GRP provides a simplified plan to manage risk because the only information a producer needs to provide is the number of acres planted by the acreage reporting date.
- Producers do not have to provide production history or evidence of loss because payments are made on losses based on the county expected yield.

GRP Restrictions

- Producers may not purchase GRP and MPCI coverage for the same crop and year.
- GRP does not provide prevented planting, late planting, or replant payments.
- It is possible for a producer to have a low yield on the acreage farmed and still not receive a payment under this plan.
- Good experience discounts earned with MPCI do not apply.
- Lenders may not accept GRP as collateral.

Forage Crop Enhancement

Catastrophic Risk Protection (CAT) coverage of 65 percent of the expected county yield and 60 percent of the maximum amount of protection per acre is available. Forage Crop GRP is available at both the additional and CAT levels of coverage, and can only be purchased through approved crop insurance agents.

GRP Program Expansion

RMA is continuing to evaluate the feasibility and effectiveness of GRP, and is monitoring producers' demand for it. RMA's objective is to expand into new areas and crops so that interested producers may obtain GRP.

Dollar Plan: The dollar plan provides protection against declining value due to damage that

causes a yield shortfall. The amount of insurance is based on a percentage of crop production cost in a specific area. A loss occurs when the annual value of the crop is less than the insured value. The maximum dollar amount of insurance is the selected percentage of the maximum dollar amount equal to CAT (catastrophic level of coverage), limited, or additional coverage levels. The dollar plan is available for several crops, including fresh market tomatoes, strawberries, and cherries (on a pilot program basis in limited areas only).

Revenue Insurance Plans

Group Revenue Insurance Policy (GRIP): GRIP makes indemnity payments when the average county revenue for the insured crop falls below the revenue chosen by the farmer.

Adjusted Gross Revenue (AGR): insures the revenue of the entire farm rather than an individual crop by guaranteeing a percentage of average gross farm revenue, including a small amount of livestock revenue. The plan uses information from a producer's Schedule F tax forms to calculate the policy revenue guarantee.

Adjusted Gross Revenue:

- provides an insurance safety net for multiple agricultural commodities in one insurance product;
- it establishes a common denominator for commodity production-cash receipts;
- makes simple and straightforward use of income tax forms; and
- reinforces program credibility by using Internal Revenue Service (IRS) tax forms and regulations.

The Adjusted Gross Revenue protection is calculated by multiplying the approved gross revenue times the percent coverage level and payment rate selected by the producer. The approved gross revenue is the smaller of:

- The average of the producer's prior five years of Schedule F tax information filed with the IRS. The average gross revenue may be adjusted for expanding operations; or
- Expected revenue for the insurance year. For example, a producer with a $100,000 approved gross revenue who chose 80/75 coverage would have $60,000 protection ($100,000 * 0.80 coverage level * 0.75 payment rate).

Crop Revenue Coverage (CRC): provides revenue protection based on price and yield expectations by paying for losses below the guarantee at the higher of an early-season price or the harvest price.

Income Protection (IP): protects producers against reductions in gross income when either a crop's price or yield declines from early-season expectations. Coverage is dependent on the policy provisions for the specific crop.

Revenue Assurance (RA): provides dollar-denominated coverage by the producer selecting a dollar amount of target revenue from a range defined by 65-75 percent of expected revenue.

Policy Endorsements

Catastrophic Coverage (CAT): pays 55 percent of the established price of the commodity on crop losses in excess of 50 percent. The premium on CAT coverage is paid by the Federal Government; however, producers must pay a $60 administrative fee for each crop insured in each county. Limited-resource farmers may have this fee waived. CAT coverage is not available on all types of policies.

Producer Obligations

Producers must:

- Report acreage accurately,
- Meet policy deadlines,
- Pay premiums when due, and
- Report losses immediately.

SELECTED INTERNATIONAL CROP INSURANCE REVIEW

This international crop insurance review relies heavily upon a survey done by the Food and Agriculture Organization (FAO) in 1991, the Crop Insurance Compendium.

AUSTRALIA

Crop insurance in Australia dates back nearly 40 years making it one of earliest countries to provide crop insurance for its farmers. Under the current program, private insurance companies fund the crop insurance program and generally receive no government support.

Participation in the crop insurance programs is voluntary and is available only to individual policyholders. According to a survey conducted by the Grain Research and Development Corporation (GRDC), 85% of grain growers take out crop insurance under the current program. It also showed that farmers with fewer hectares of crop are less likely to have crop insurance than those with more.

Since crop insurance programs vary across Australia by insurance companies, producer needs and geographic location, it is difficult to summarize the Australian crop insurance scheme into one. As a result, the following crop insurance description pertains to a program offered by the Queensland Crop Insurance Agencies.

Crops Covered

Winter crops, which make 95% of the business in Australia, are all covered under the crop insurance schemes. These include chickpeas, triticale, wheat, barley and oats. Insurance is also provided for summer crops, which include sorghum, sunflower, corn, white (navy) beans, soybeans and mung beans.

Perils Covered

For the most part, farmers are able to insure their crops under a named peril system, which covers damages from fire, hail, spray drift, wandering livestock, storage and transport. For events such as drought, frost, mice plagues, locust, unseasonable and prolonged rain (floods) and extreme temperatures, insurance is not available.

Sum Insured Calculation

At the time of application, the farmer nominates an estimated yield (Provisional Yield) for the crop in the upcoming season. If one is not provided, a provisional yield allocation is applied and provides the maximum basis of compensation in the event of a claim. Revisions to yield estimates are accepted any time during the duration of the insurance with a few exceptions. Using these estimated yields, the sum insured is calculated as follows:

*Sum Insured = Estimated Yield in tonnes per hectare * Total area of the crop * Value per tonne * Percentage of the particular crop owned by the insured*

Premium Calculation

Premiums are not levied in Growing Phases 1 or 2 if there are no claims during those periods. If a claim is filed a premium is levied and the assessed claim becomes the sum insured. In Growing Phase 3, a premium is levied based on the yield estimate, area planted and mutually agreed insured values. The premium calculation varies from shire to shire and from crop to crop, but for the most part follows as:

*Premium = Sum Insured * Premium Rate*

On average, farmers pay approximately 1.9% of their crop value as a premium (Lovett).

Future of Crop Insurance

As of March 1999, the Australian Department of Agriculture, Fisheries and Forestry had commissioned a study to analyze the feasibility of a multiple-peril crop insurance scheme which would include coverage of such events as drought, frost and flood damage. It was hoped that the new program would be ready for the 2000 crop season (Vaile).

NEW ZEALAND

Private interests and grower groups have provided the main support for crop insurance initiatives in New Zealand, where there is no legislation relating to crop insurance. The program, which is administered by the Farmers Mutual Insurance Association, is compulsory for all wheat producers and the insurance is provided only to individual policyholders. There are other crop insurance companies that provide insurance to New Zealand growers, however, they are mainly concerned with damages to edible fruit and vegetables. (i.e. apples, tomatoes, kiwi, etc)

Crops Covered

Wheat is the only crop covered under a crop insurance program.

Perils Covered

The program offers coverage under a multiple peril system. Damages covered include fire, hail, frost, wind, flood, snow, earthquake, wandering stock, overturning vehicles, objects dropped from aircraft and Aircraft damage.

Sum Insured Calculation

The sum insured calculation is based on the market value of the estimated crop potential yield.

Premium Calculation

Premiums are calculated as the percentage of the sum insured.

SWEDEN

Under 1988 legislation, the responsibly for the Swedish crop insurance scheme is vested with the Farmers Union (LRF), of which 95% of the Swedish farmers are members. To administer the program the Farmers Union established "SKORDESKADESKYDDET", however, the government still remains ultimately responsibility for the program. .

The program is funded primarily from the compulsory production fees paid by the farmers (80%), while the government finances the remaining 20%. Costs of the program are covered by the interest of the crop insurance fund.

Farmer participation in the crop insurance program is compulsory for farmers with over 5 hectares of land and is available only to individual policyholders. Furthermore, the crop insurance scheme that is in place can be classified as a catastrophic system in that damages under this system are only paid to the farmers if over 20% of the crop value is lost.

Crops Covered

Under the crop insurance scheme, grain, oilseeds, potatoes, sugar beets, ley, yellow peas and brown beans are all covered.

Perils Covered

A multi-peril system is in place in Sweden for all the crops mentioned above. However, most damages are related to either too much rainfall or too little rainfall.

Sum Insured Calculation

Production from the farm provides the basis for which the sum insured is calculated.

Premium Calculation

The compulsory production fees paid by the farmer represent the insurance premiums.

JAPAN

Crop insurance in Japan has been a government initiative since 1939 with the objective to stabilize farm income and promote agricultural productivity by indemnifying farm loss. Participation in the individual-yield insurance program is compulsory for farmers growing rice, wheat and barley. For farmers growing other crops, the program is provided to the farmer on a voluntary basis.

The Japanese crop insurance scheme is a publicly provided program, which is administered at three different levels of government. At the local level, Agricultural Mutual Relief Associations (AMR) are responsible for the operation of the program. The next levels in the hierarchy are The Prefectural Federation of AMR and then the National Agricultural Insurance Association (federal government).

Crops Insured

Paddy rice, wheat, barley, upland rice, potatoes, soybeans, red kidney beans, sugar cane, sugar beets, hops and tea plants are all insurable

Perils Covered

The above crops are covered under a multi-peril system. Damages from fire, hail, wind, windstorm, flood, excess rain, drought, heavy snow, pest, disease, earthquake, volcanic eruption, wild birds and animals, explosion and aircraft or vehicle accidents are all covered under the Japanese crop insurance scheme.

Sum Insured Calculation

The sum insured calculation has two components – insured yield and insured price. The insured yield component is equal to 70% of the standard yields for the plot, while the maximum amount of insurance is determined by the Ministry of Agriculture on a per kilogram basis. These two values are multiplied together to obtain the sum-insured calculation. Payments are triggered by a shortfall of the individual farm's actual crop yields relative to predetermined trigger values for those yields.

Premium Calculation

The Ministry of Agriculture sets the minimum premium rate based on annual insurance damage rates for each association. This value is then used by the local governments to determine the actual premium rates, which can be no less than the set minimum. Using the established premium rate, the premium is calculated as follows:

Premium = Sum Insured * Premium Rate

The premium rates are revised every 3 years.

SPAIN

According the FAO Crop Insurance Compedium in 1991, Spain has the largest mulitperil crop insurance scheme in Western Europe. Crop insurance is provided by private organizations, which are directed by Agrosegruros, a government agency. Spanish crop insurance is a voluntary program available to both individual and group policyholders.

Crops Insured

Under the various crop insurance programs, Spanish farmers can obtain insurance for 43 crops.

Perils Covered

Named perils include hail, fire, frost, heat and drought.

Sum Insured Calculation

Depending on the policy, either the farmer or the government determines the guaranteed crop yield. Under the Hail & Fire policy the farmer chooses the yield, while the government in the case of multi-peril policies sets the maximum yield.

Premium Calculation

Premiums differ based on the policy and loss ratio for each township. For multi-peril policies, premiums are calculated using historical data. Hail and Fire policy premiums are set after a review of past losses and claims.

Overview and Summary of Crop Insurance Programs in Other Provinces and Countries

The Alberta crop insurance program has many parallels with crop insurance in other jurisdictions. The Alberta program focusses on multiple-peril yield insurance with premium expenses shared between producers and government, as do other Canadian programs. It is shares similarities with the US yield-based APH program and Spanish crop insurance in its sharing of premium costs between farmers and government. The US APH program offers a greater range of price election alternatives (between 55 and 100% of announced rice) than the Alberta program (hi and low price option).

There are other crop insurance programs offered in other jurisdiction that are not available in Alberta. Group Risk Plans offered in Quebec and the US insure regional average yields, thus separating indemnity payments from individual yields. The advantage of this type of program is that it reduces farmers' incentives to vary production practices in attempt to trigger an indemnity, and has lower administrative costs than multiple-peril yield insurance because only region average data is collected, rather than individual data. The Dollar Plan is a new pilot program that provides protection of production costs for horticultural crops. The program uses estimated production costs by county to value yields rather than crop prices. Indemnities are triggered when net revenue per acre (net of harvest cost) falls below protection level. The program thus accounts for increases in crop prices when a yield shortfall occurs. The Gross Revenue Assurance Plan insures whole-farm gross revenue, across crop and livestock commodities based on historical income tax records. It is innovative in its use of tax records to establish producers' credibility in the program.

Crop insurance for selected commodities is compulsory in Japan and New Zealand. The rationale appears to be to protect the liability of other farm programs in the event of a yield catastrophe. Crop insurance in Australia is operated privately and is somewhat more limited in scope with respect to the perils covered. Sweden has a crop insurance system that is administered by a major farm organization. This is organization may produce some benefits in terms of reduced administration cost, reduced incidence of moral hazard, and greater compliance because a large proportion of farmers are members of the organization.

II CROP INSURANCE- THEORETICAL BACKGROUND

(*i*) Premium and Coverage Level Adjustments

In a crop insurance program, coverage levels and premiums are adjusted as insured farmers

accumulate a record of yields in the program. The rationale for adjustments is that initially, the insurer has incomplete information on the "type" or "riskiness" of an individual producer. As the producer accumulates a yield record in the crop insurance program, he identifies his level of yield risk. The insurer uses this information to update information and provide insurance on a more individualized basis. This reduces the extent of cross subsidization across producers. For producers with consistently above average yields (less risky), the insurer can increase coverage levels and/or reduce the premium cost and retain the financial integrity of the crop insurance program. For producers with consistently lower than average yields, the coverage level must be reduced and/or the premium increased to allow the crop insurance program to breakeven.

Insurable Yields and Coverage

Crop insurance programs protect farmers against yield shortfalls. In order to do so, the level of insurance coverage, or insurable yield, must be determined and adjusted. There two components to the establishing a yield guarantee under crop insurance. The first component is the percentage of the insurable yield that is covered. This percentage is set at a level below 100%- coverage at more than 100% of historical levels would imply insuring yields at levels that exceed previous yield observations. Also, insuring at under 100% of yield is a form of deductible- so that the first *X*% of yield lost is borne by the producer. The idea behind the deductible is to prevent producers from intentionally getting low yields that trigger indemnities. The percentage coverage is typically set (or selected by producers) at between 50 and 90%.

The insurable yield is established using one of the following approaches;

1. Pooled yield coverage: a producer's insurable yield level is determined by the average yield level in the surrounding area
2. Fully individualized coverage: a producer's insurable yield is determined from actual production records
3. Pooled yield coverage with individual adjustment: Insurable yield determined by the average yield in the surrounding area, adjusted for individual yield experience

By pooling yield coverage, producers in an area share the coverage level. Because it is derived from an average, it means that producers with above average and below average yields are eligible for the same level of coverage. Under fully individualized coverage, a producer's level of insurable yield is determined entirely from his individual yield history. The disadvantage of fully individualized coverage is that producers experiencing locally low yields do not have the benefit of pooling with higher yield producers, so insurable yield decreases; however, producers with higher yields retain higher levels of coverage rather than averaging with lower yield producers. Individual adjustment to pooled coverage adjusts individual producers' coverage up or down from the pooled yield based on the ratio of their individual yield to the pooled yield.

Yields Used in Premium Calculation

There are also alternative approaches to establishing the yield loss history (indemnity history)

from which the premium is calculated:

1. Pooled: the premium paid by producers within an area is determined based on the average indemnity paid in the region
2. Fully individualized: the premium paid by a producer is based on the individual producer's history of indemnity payments
3. Pooled with individual adjustment: a base premium is established from average indemnities paid in a region, with adjustments made for individual indemnity experience

Pooling indemnity the experience across producers in a region allows producers to share individual indemnity experience, so if a subset of producers in a region suffer low yields their premium is held down by the more favorable yields of other producers. Under a fully individualized system, producers' premiums are based solely on individual indemnity history. Individual adjustments to pooled indemnity reward producers with a history of lower claims with a lower premium, and retains some sharing of indemnity within the region.

(*ii*) Premium Setting Principles and Their Properties

In order for an insurance program to be financially viable, an insurer must charge a premium sufficient to pay expected indemnities E[I], cover the carrying cost of capital, A, and generate a return to the risk that is borne, R. So the premium is calculated by

$$\text{Premium} = E[I] + A + R$$

The cost of capital and return to risk are the components that allow the program to generate supplementary cash flow; it is referred to as the load (load = A + R). Within the load, the cost of capital is fixed; however, the return to risk can be influenced by the insurer. The amount that must be charged to cover risk is reduced if the insurer pools the risk across areas, over time, or across types of insurance. Alternatively, the insurer can resell the risk to other insurers (reinsurance). In crop insurance, pooling risks across areas is difficult because yields in different regions are frequently related (because of, for example, a widespread drought or frost). Because of this, reinsurance is a more common means to reduce the risk (and premium cost) of crop insurance than pooling.

In setting up an insurance program, a rule must be adopted that relates the total premium charged to the distribution of risks and the liability for indemnities. The following theoretically desirable properties for a premium setting rule are cited by Gerber:

1. Nonnegative safety loading: premium □expected indemnity
2. Premium does not exceed maximum indemnity
3. Consistency: if a constant is added to the indemnity, the constant must also be added to the premium
4. Additivity: for two independent risks, the sum of the premium charged to insure the two risks is the same as the premium charged to insure the sum of the risks
5. Iterativity: for two risky outcomes X and Y, the premium to insure X can be calculated by applying the premium setting principle to X given Y, then applying the principle to Y

There are a number of candidate premium-setting principles that can be applied;

- *Net premium principle*: set premium equal to expected indemnity E[I] (zero load). This is called the *actuarially fair* premium
- *Expected value principle*: set premium with safety loading proportional to the expected indemnity
- *Variance principle*: set premium with safety loading proportional to the variance in indemnities
- *Zero Utility principle*: set premium such that
  premium= expected utility with insurance - expected utility without insurance
  where a person's utility (or satisfaction) is specified by a formula

(*iii*) Actuarial Principles and Alberta Crop Insurance

In the Alberta crop insurance program, the base premium is set at a level equal to the expected indemnity (actuarially fair), with a safety loading added to ensure the financial viability of the program, called the "self sustainability load". The self sustainability load is adjusted annually on the advice of the federal government. Each year, the balance in the crop insurance fund is evaluated using actuarial procedures to determine the probability that the fund could be depleted. The sustainability load is adjusted to guarantee (with 95% confidence) that the fund balance could (at worse) be depleted and recover within 20 years. Also, adjustments are made to account for individual characteristics and claim experience that are indicative of a producer's true yield risk. These adjustments are justified on the basis that the cost of offering insurance to a producer is dependent the producer's true yield risk.

The Alberta crop insurance program is structured around pooled premium and coverage, with individual adjustments. The coverage level is determined using risk area averages. These risk area averages are estimated using historical data, adjusted for exceptionally good and bad yields and for technological changes in farming. This is consistent with previous studies (see below). Individual adjustments are made based on the ratio of a producer's yield to the risk area average (index). This adjustment is made regardless of whether a claim was made. It is a consistent and cost-justified means to adjust coverage as the true risk (as expressed by individual relative to risk area yield) of a producer's yield is realized.

The premium is set at the actuarially fair level with self-sustainability load added at the provincial level. The actuarially fair premium satisfies all of the desirable properties of a premium setting rule stated above. This base premium is adjusted across crops and risk areas, and to reflect individual characteristics and experience that affect the cost of insuring an individual producer. These adjustments include farm size, continuous participation, insuring all crops, and individual claim experience. History has demonstrated that these premium adjustments are cost justified at the broad levels at which they are applied.

(*iv*)Unique Problems of Crop Insurance

The foregoing discussion provides a general background on insurance. However, there are other aspects of crop insurance that introduce complications. A rich literature has developed in crop insurance that highlights some unique aspects of crop insurance and suggests empirical methods to address these issues. A survey of this literature provides some insight as to why crop insurance programs typically have government involvement and why premiums are set and adjusted in ways that vary across producers and across regions.

The previous section outlines the conditions in which insurance would be purchased and sold between an individual and a private insurance company. In applying expected utility theory in insurance, it is critical that the risks being insured are *independent*. What this means is that of the people who purchase insurance, the probability that one person makes a claim (experiences a loss) does not affect the probability of others making a claim. The insurance company pools the premiums of insureds for funding of indemnities, which allows the premiums to be reduced. For example, this works well in fire insurance where one person's house burning down does not significantly affect the probability of another person's house burning. In such situations, markets function well in providing insurance services.

However, crop yields tend to be highly correlated across farms. For example, the occurrence of a drought usually affects a broad section of farms rather than randomly selected farms in a local area. Thus, the risks are not independent and it is much more difficult to pool premiums across producers (Miranda and Glauber, 1997). Ahsan *et al* have shown that a pooling equilibrium could only exist in a private crop insurance program in the narrowest of contexts, and even then it is likely the premiums would be prohibitively high. Miranda and Glauber found that because of correlation between yield risks, private crop insurers' portfolios in the US would be 20 to 50 times riskier than if the risks were independent (like other risks private insurers underwrite). The problems faced by insurers due to correlation in yield risks across farms could be mitigated if a reinsurance market existed. For example, it is now common for farmers to sell products on contracts with fixed (insured) prices; the risk associated with these arrangements is dramatically reduced because the parties to the contract can reinsure prices using the futures market. Similar reinsurance markets are not nearly as common for crop yields, however. This is an important impediment to establishing private crop insurance markets.

Another feature of crop insurance commonly cited as a market failure in the crop insurance literature is the "adverse selection" problem. Adverse selection arises because producers are better informed as to their expected yield than the insurer is. However, all producers are eligible to purchase insurance at the same cost (initially). This has the effect of attracting producers whose expected indemnity payment exceeds the premium cost (higher risk producers). As riskier producers enroll in the program, premiums must be increased to offset the additional risk incurred by the insurer, which creates a disincentive for lower risk producers to participate. Thus, increasing the premium only exacerbates the adverse selection problem. In a study of Kentucky soybean producers, Skees and Reed (1986) found that decreasing premiums for higher yield

(lower risk) producers was justified as a means of combatting adverse selection. The problems of adverse selection provide the theoretical motivation for area-yield crop insurance programs, such as the Group Risk Plan crop insurance program in the United States (Skees, Black, and Barnett (1997), and Miranda (1991)).

A related problem is moral hazard. Moral hazard occurs in a crop insurance program when, after purchasing crop insurance, producers alter their production practices to increase the probability that an indemnity will be paid to them. The incentive toward moral hazard is generally adjusted for by instituting a deductible in the crop insurance contract (Miranda, 1991). In an empirical study of moral hazard among Kansas wheat producers, Coble *et al* found that moral hazard was a significant problem in adverse weather years because farmers decreased their management effort when they perceived significant crop losses would occur due to natural factors. Vercammen and van Kooten (1994) demonstrated that there can be incentives for cyclical moral hazard in individual coverage crop insurance contracts as insureds alternate between intentionally attempting to generate indemnities and attempting to produce high yields to boost the average.

The lack of independence in risks across farms and the problems of adverse selection and moral hazard provides the rationale for government involvement in crop insurance programs. Because of these complications, a private insurer would need to charge a premium in excess of what most farmers (at least the lower risk farmers) would be willing to pay. Thus, governments subsidize insurance premiums so that the cost to farmers is reduced, encouraging participation of more and lower risk farmers.

(*v*) Empirical Research on Crop Insurance

The majority of economic research in crop insurance has been related to the problems of adverse selection and moral hazard. In particular, the theoretical aspects and design of programs to address adverse selection and moral hazard in crop insurance has permeated the literature in recent years. However, empirical studies of existing crop insurance programs have been completed. Of particular importance to this review is a study conducted in Manitoba by Ye and Yeh (1995) that compared area-yield with more conventional forms of crop insurance. Using data from 371 Manitoba wheat producing farms, the study compared crop insurance programs using fully individualized coverage, individual-indemnity with area-based coverage, and an area-yield program. The operation of each of the programs was simulated using 25 years of actual yield data. The results showed that fully individualized coverage gave the greatest level risk reduction, followed by individual-indemnity with area-based coverage. The area-yield program gave the lowest level of risk reduction.

Crop insurance is commonly treated as distinct from price risk in the literature. However, in years when there are widespread low yields, prices tend to increase because supply is down; conversely when yields are high crop prices tend to fall because supply increases. A study by Wang *et al* (1998) analyzed this interaction using crop insurance along with commodity futures and options. There results were obtained from a stochastic simulation of corn yields in southwest

Iowa, with individual coverage and area-yield crop insurance programs. The results showed that the price-yield relationship is negative for both county average and farm-level yields, which provides a natural hedge. This natural hedge reduces the motivation to purchase crop insurance; the greater the negative relationship between yield and price, the less important crop insurance is in risk management. The results showed that at assumed coverage levels, individual coverage was preferred to the area-yield plan in managing risk.

Goodwin and Smith (1995) survey several studies estimating the price elasticity of demand for crop insurance. The aspects of the demand for crop insurance include the number of acres to insure, the amount of liability to purchase, and whether to participate. In all cases, as the premium increases the quantity of insurance and/or participation rate falls, so the price elasticity of demand is negative. For acres insured, the elasticities estimated were -.32 (Iowa corn), -.92 (US crops), and -.2 (US crops). Elasticities estimated for liability were -.73 (Iowa corn), -.51 (Kansas wheat), and between -.58 and -.69 (Montana wheat). Thus, both insured acreage and liability are sensitive to premium rates. However, an eastern Tennessee survey of insureds and non-insureds (Beeson, 1971) found that most farmers that dropped crop insurance did so because of insufficient coverage rather than high premiums.

Related to the supply of crop insurance by insurers, Goodwin and Smith cite evidence that insurers avoid insuring in high risk areas unless the actuarial link (indemnity-premium relationship) is strong. The implication is that insurers are only willing to provide insurance in higher risk areas if the premium can be readily adjusted to reflect the indemnity experience. Results obtained by Goodwin (1993) for corn in Iowa show that lower risk producers are more sensitive to premium rates than higher risk producers. The implication is that raising premiums can induce adverse selection as lower risk producers (more sensitive to premium increases) exit the program, with higher risk producers remaining.

Empirical Methods in Crop Insurance

For normally distributed crop yields a procedure developed by Botts and Boles is used to calculate the actuarially fair premium. Alternatively, this procedure can be used to calculate the maximum yield level that can be insured given the actuarially fair premium. The procedure is implemented by collecting a time-series of yield data and adjusting for technological improvements with a time trend (detrending). The disadvantage of this procedure is that it imposes the normal distribution on the data. Non-parametric methods have been developed to estimate actuarially fair premiums, that make no assumption on the mathematical function that generates the yield distribution. The disadvantage of non-parametric methods is that a very large volume of data is required, and there can be gaps and discontinuities in yield observations. In most applications, smoothing methods must be applied to effectively use non-parametric methods. Goodwin and Ker (1998) survey and apply smoothing techniques with non-parametric methods in a study of premium rates in the US Group Risk crop insurance program.

III FINANCIAL PERFORMANCE OF ALBERTA CROP INSURANCE

Premiums, Indemnities, and Funding Sources

The all-risk crop insurance program is funded by the federal and provincial governments and producer premiums. The allocation of costs between these three groups for premiums and administration has changed several times over the life of the program as detailed in Table 3.1 below. The same allocations also apply to hail endorsement.

Table 3.1 Historical Crop Insurance Funding Shares

		Producer Share	Provincial Share	Federal Share
1965	**Premium**	20%		80%
	Administration		50%	50%
1968	**Premium**	25%		75%
	Administration		50%	50%
1973	**Premium**	50%		50%
	Administration		100%	
1990	**Premium**	50%	25%	25%
	Administration		50%	50%
1997	**Premium** 50% coverage	20%	40%	40%
	over 50%		25%	25%
	Administration		50%	50%

Table 3.2 below details the value of all-risk crop insurance premiums billed to producers, the Government of Alberta and the Government of Canada, after discounts surcharges, for the crop years 1990 to 1999[3]. Total indemnities and the indemnity/premium ratio are also included. The premiums are the amounts billed by AFSC for the crop year, which may differ slightly from the amount collected in the fiscal year due to accounts not collected on; the crop year and fiscal year ending in different months, etc. Likewise, the indemnities figures represent indemnities paid for that crop year, regardless of which fiscal year an indemnity was paid out in. Reporting the information in this manner gives the most accurate picture of what has occurred with the program in a crop year. The Risk Area Financial Summary (attached) breaks down the information in Table 3.2 by risk area and also includes acres insured, total risk and cumulative indemnity/premium ratios.

Table 3.2
All-Risk Crop Insurance Premiums and Indemnities
Crop Years 1990 to 1999

Crop Year	Producer Premiums	Provincial Premiums	Federal Premium	Total Premium	Indemnities	Indemnity/ Premium
1990	$45,880,839	$22,940,420	$22,940,420	$91,761,678	$68,223,796	0.74
1991	$38,180,349	$19,090,174	$19,090,174	$76,360,698	$34,288,184	0.45
1992	$40,661,050	$20,330,525	$20,330,525	$81,322,099	$142,626,072	1.75
1993	$45,850,009	$22,925,005	$22,925,005	$91,700,018	$60,463,587	0.66
1994	$41,822,559	$20,911,280	$20,911,280	$83,645,118	$23,433,134	0.28
1995	$43,311,318	$21,655,659	$21,655,659	$86,622,636	$31,602,315	0.36
1996	$43,968,709	$21,984,355	$21,984,355	$87,937,418	$34,043,513	0.39
1997	$35,312,458	$32,330,137	$32,330,137	$99,972,732	$52,303,669	0.52
1998	$36,949,607	$34,269,299	$34,269,299	$105,488,205	$61,723,059	0.59
1999	$36,699,320	$33,603,852	$33,603,852	$103,907,025	$28,820,730	0.28
TOTAL	$408,636,218	$250,040,706	$250,040,706	$908,717,627	$537,528,059	0.59

Table 3.2 shows that in recent years, the indemnity/premium ratio has been significantly less than 1, indicating that indemnity payments paid out have been lower than total premiums paid in. The resulting growth in funds available for indemnity payments provides the rationale for the 30% reduction in premium rates in 2000.

The performance of the program has a regional dimension. That is, losses in one region can be offset somewhat by net gains in funding in other regions. This pooling effect helps maintain the

[3] This does not include hail endorsement, straight hail or forage insurance numbers.

financial viability of crop insurance and keeps premiums down. However, if a specific region were continually drawing funds out of the pool to finance indemnities, it could be a source of concern.

These insights are illustrated by the cumulative loss ratios by sales regions presented in Figure 3.1 and the annual loss ratios presented in Figure 3.2. The data backing up these figures are included in the tables in Appendix B. Both figures show that high losses in 1984 and 1985 were borne disproportionately by the Lethbridge and Red Deer sales regions, and that these losses were dampened by relative gains in Camrose and Fairview. In particular, Camrose has experienced a cumulative loss ratio less than one, so it provides cash that is used to offset losses in other regions. Also, on a cumulative basis, the Red Deer region has the highest loss ratio. This is surprising given the recent history from annual loss ratios. It suggests that Red Deer has experienced smaller but more persistent indemnity payments than Lethbridge. Thus, in the 1990's, at the regional level and across all crops, the Camrose and Fairview regions have tended to be contributors to the pool of crop insurance funds, and Lethbridge and Red Deer regions have tended to draw from the pool.

High Risk Subsidy Program

This subsidy from the Province of Alberta capped the premium cost for producers who were in a high-risk, and therefore high premium rate area. The subsidy was introduced in 1975, when the Province paid half of the premium in excess of 6% at the 60% coverage level and in excess of 7.5% at the 70% coverage level. Starting in 1983 until 1991 the subsidy paid the full cost of the premium in excess of 6% at the 60% level and 8% at the 70% level. The program was phased out over the 1991, 1992 and 1993 crop years by increasing the premium rate at which the subsidy kicked in. The provincial premium numbers in Table 3.2 do not reflect the high-risk subsidy; Appendix C details the trigger premium rates, and annual and cumulative amounts of the subsidy over its lifetime.

Figure 3.1

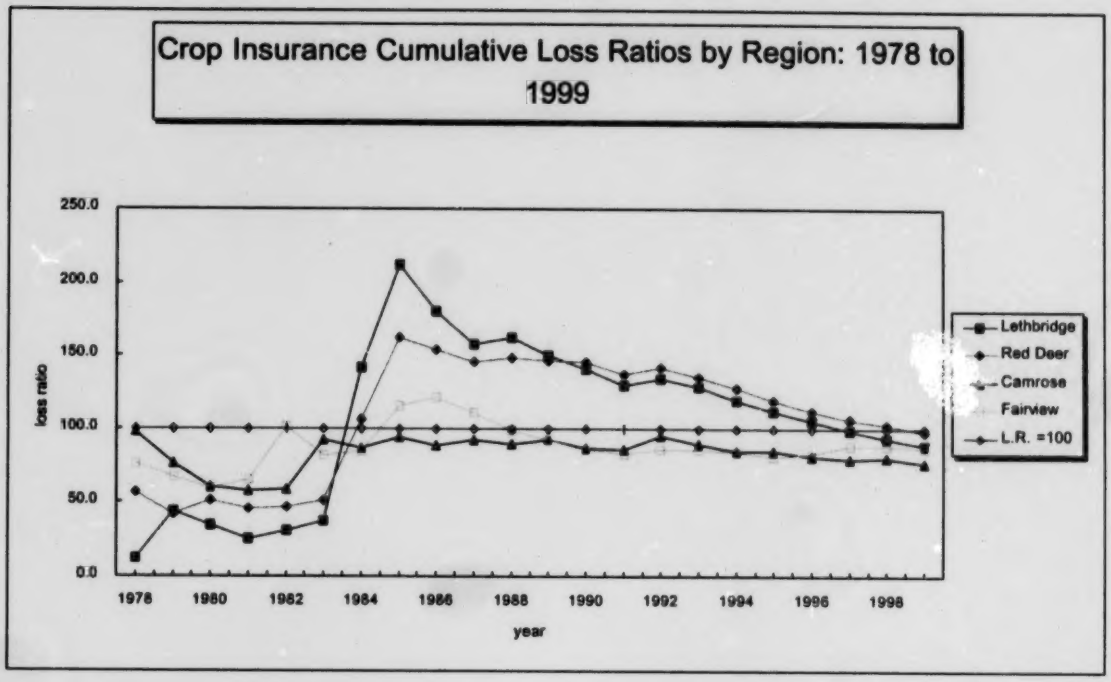
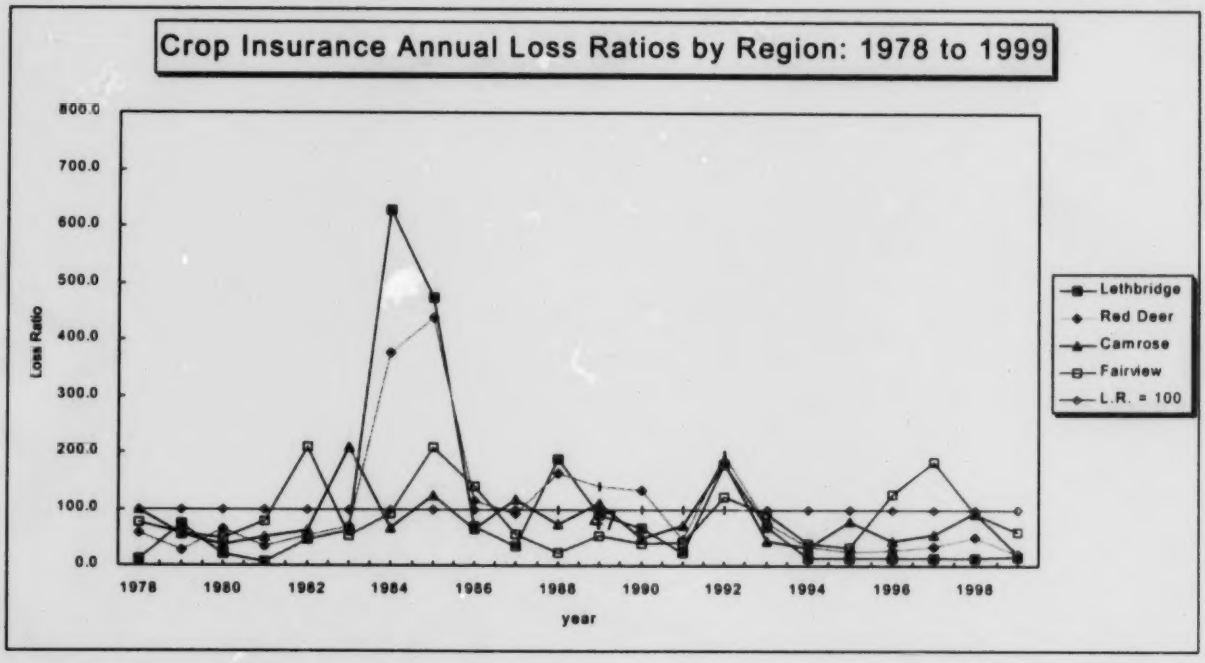


Figure 3.2



Reinsurance Funds

Alberta Crop Insurance utilizes two types of reinsurance in the operation of their multi-peril insurance programs. The Crop Reinsurance Fund of Alberta and the Crop Reinsurance Fund of Canada for Alberta are built up in years when there is a surplus (premiums are greater than indemnities) in the program, and drawn down when indemnities exceed premiums. Payments to and withdrawals from the funds are made according to a formula contained in the agreement which details the fiscal responsibilities of the two levels of government with regard to crop insurance. The contributions, withdrawals and year-end balances of these funds are shown in Appendix D.

Beginning in the 1998, private reinsurance was implemented to cover a certain level of losses for the all-risk crop insurance, forage insurance and hail endorsement programs. AFSC pays a premium for this reinsurance, which covers losses between 115% and 180% of total premiums collected for a crop year. In 1998 the premium was $11 million and if necessary would have covered losses above $179 million and up to $281 million.

IV EMPIRICAL ANALYSIS OF ALBERTA CROP INSURANCE PERFORMANCE

Because of rules protecting client confidentiality, all primary data analysis was conducted by AFSC staff. The research design and results interpretation were completed by the George Morris Centre in consultation with AFSC..

Adverse Selection

(i) Yields of Producers Enrolled in Crop Insurance Relative to Statistics Canada Yields

Statistics Canada surveys crop yields from producers in census divisions across the country. The yields collected using this procedure are not specific to producers that purchase crop insurance. Thus, when compared with yield data collected from AFSC insureds, a significant difference in yields would suggest that farmers not purchasing crop insurance have different yields. In particular, if adverse selection was a prevalent problem, we would expect the yields of producers surveyed by Statistics Canada to be significantly higher than those of crop insurance holders.

A comparison was made of yields reported by Statistics Canada and crop insurance records for census divisions in which wheat, barley, and canola are significant crops. Crop insurance data was aggregated up to give the same geographic representation as the Statistics Canada census divisions (CD). Because Statistics Canada uses a different collection procedure, some adjustments to the CD data were made so it could be compared with crop insurance data. The census division data does not account for dockage on grains, so dockage rates from historic crop insurance data were applied to the census division data, and the CD yields were adjusted down accordingly. Also, the census division data is based on harvested acreage, while crop insurance records are from seeded acres. To account for this difference, crop insurance yields that were less than 10% of risk area normals were discarded (because the area seeded would not have been worth harvesting). These adjustments make the crop insurance and Statistics Canada data more comparable. There remain difficulties with the Statistics Canada data that are more difficult to adjust for. For example, Statistics Canada does not differentiate wheat by type (eg. durum, red spring, etc.), they do not indicate the use of crops for silage rather than grain, and they do not indicate whether the crop was produced on fallow or stubble. This presents a caveat in interpreting the analysis.

The results are summarized in Tables 4.1, 4.2, and 4.3 below, where CD is the census division, SC represents the Statistics Canada data, and CI is the adjusted crop insurance data. The columns present comparisons of mean (average) yield, standard deviation in yields, maximum yield, minimum yield, and acreage. Note that the Statistics Canada acreage is the seeded acreage and the crop insurance data is for insured acreage. Wheat yields were compared in census divisions 2, 5, 7, and 10, canola comparisons were done on census divisions 5, 7, 10, and 19, and barley comparisons were done based on census divisions 5, 6, 8, and 10.

In all census divisions, the comparison showed that the Statistics Canada mean yield and the crop

Table 4.1 Wheat Yields from Statistics Canada and Crop Insurance Data

CD	Mean Yield Bushels/acre		Yield Std Dev Bushels/acre		Max Yield Bushels/acre		Min Yield Bushels/acre		Acres (thousand)	
	SC	CI	SC	CI	SC	CI	SC	CI	SC	CI
2	41.9	41.2[b]	5.0	5.9	49.3	49.2	33.5	30.2	793.3	363.7
5	38.1	38.0[ab]	5.0	5.6	45.4	47.7	31.3	30.8	1154.9	758.0
7	33.2	33.2[ab]	4.5	5.1	41.1	43.9	26.9	26.3	861.8	532.3
10	33.6	33.9[ab]	5.2	5.8	41.0	43.1	26.2	24.3	901.0	427.4

Table 4.2 Barley Yields from Statistics Canada and Crop Insurance Data

CD	Mean Yield Bushels/acre		Yield Std Dev Bushels/acre		Max Yield Bushels/acre		Min Yield Bushels/acre		Acres (thousand)	
	SC	CI	SC	CI	SC	CI	SC	CI	SC	CI
5	58.6	57.3[ab]	6.0	7.4	68.2	69.8	49.7	46.2	496.6	322.3
6	61.5	60.6[ab]	6.7	8.0	70.4	75.4	46.8	45.2	528.8	355.5
8	66.2	64.7[ab]	4.7	6.3	73.0	73.5	57.6	56.2	499.7	316.5
10	52.3	49.7[b]	7.3	9.1	64.6	69.6	43.7	38.9	594.6	257.1

Table 4.3 Canola Yields from Statistics Canada and Crop Insurance Data

CD	Mean Yield Bushels/acre		Yield Std Dev Bushels/acre		Max Yield Bushels/acre		Min Yield Bushels/acre		Acres (thousand)	
	SC	CI	SC	CI	SC	CI	SC	CI	SC	CI
5	24.6	24.7[ab]	3.4	3.2	24.6	24.7	19.8	19.9	138.0	111.0
7	22.2	22.1[ab]	3.3	3.2	29.9	30.5	18.9	19.1	483.0	320.9
10	21.9	22.0[ab]	3.9	3.9	31.8	32.2	17.4	17.6	688.6	388.4
19	19.5	19.4[ab]	2.0	2.3	22.8	23.7	15.3	14.7	598.4	226.3

[a] Statistics Canada and Crop Insurance average yields are statistically equal with 95% confidence
[b] Statistics Canada and Crop Insurance average yields are statistically equal with 90% confidence

insurance mean yield were not statistically different (with 95% confidence). The inference is that, based on the Statistics Canada data, there is no reason to believe that producers who do not purchase crop insurance have higher yields. At the 90% level of statistical confidence, Statistics Canada yields are higher in CD 2 for wheat and higher in CD 10 for barley. The yield difference in CD 2 for wheat can be attributed to widespread irrigation in the area. Drought is the major peril in CD 2, and investment in irrigation is effectively a substitute for crop insurance. Thus, comparing yields from irrigated, non-insured acres with non-irrigated, insured acres will make it appear as though non-insured acres have higher yields. It is unclear why yields on non-insured acres exceed insured acres in CD 10; this may simply be due to the differences between the Statistics Canada and crop insurance data.

(*ii*) Impact of GRIP on Aggregate Risk Insured

During the period in which the Gross Revenue Insurance Plan (GRIP) was in place (1991-1994), a group of producers enrolled in crop insurance for the first time and subsequently left when GRIP was terminated. This group did not insure prior to or since GRIP, and thus provide a sample (during the GRIP period) of how the yields of producers who do not normally insure compare with the yield of crop insurance producers. Yield data from this group is used to test whether producers that insure have lower yields than non-insuring producers; this data also provides evidence of the incidence of adverse selection in the crop insurance program.

Data were collected for the 1991-1994 period from risk areas in which there were at least 20 producers that enrolled in crop insurance only for GRIP and in which there at least 20 pre-enrolled and continuing crop insurance producers. For the purposes of the analysis, the two groups were partitioned and identified separately within the risk area. For each group, the ratio of actual yield to risk area normal was computed. The mean and variance of these ratios were computed for the GRIP and crop insurance group and then compared using statistical significance tests. The results for mean yield indexes are presented for red spring wheat, barley, and canola in Tables 4.4, 4.5, and 4.6 below. The empty cells represent years and risk areas in which insufficient data was available. Appendix E presents the associated data on yield index variances.

The tables show that in most cases there are no significant differences between the yields of GRIP and crop insurance producers. There are sporadic differences between the mean yields of the GRIP producers and the crop insurance group; however, in most cases, statistically significant differences in yield indexes show that crop insurance producers have higher yield indexes than the GRIP producers. The tables in Appendix F also show that there are also sporadic differences in yield index variance, but that in the majority of cases there is no statistically significant difference in yield variances. The analysis also shows that of 99 comparisons made between

Table 4.4 Comparison of GRIP and Crop Insurance Mean Yield Index
Red Spring Wheat

		RA 2	RA 4	RA 5	RA 8	RA 9	RA 11	RA 12	RA 13	RA 15	RA 19
1991	GRIP	121.73	129.49	90.56	106.74	131.69	113.11	101.63	84.64	95.43	93.66
	Crop Ins	117.78	141.56	99.5	111.27	126.29	104.71	106.85[a]	88.04	95.92	105.45[a]
	GRIP Clients	30	34	29	49	48	24	99	73	25	50
	Crop Ins Clients	1131	1094	1058	1149	1342	528	1297	1721	316	668
1992	GRIP	90.07	127.31	79.09	89.2	107.55	89.74	83.71	70.25	64.24	66.94
	Crop Ins	77.44	133.79	82.69	93.62	108.58	91.07	83.66	74.17	71.76	85.74[a]
	GRIP Clients	36	28	32	57	43	22	64	91	84	33
	Crop Ins Clients	957	999	924	1075	1304	511	880	1269	360	533
1993	GRIP	149.24[a]	1152.3	105.05	88.34	112.98	93.26	107.35	111.73	102.28	84.82
	Crop Ins	129.82	164.46	111.29	96.12[a]	129.07[a]	102.08	116.37[a]	119.06	106.1	99.64[a]
	GRIP Clients	39	24	30	62	44	27	81	111	54	30
	Crop Ins Clients	1108	946	980	1158	1331	483	1349	1582	348	549
1994	GRIP	126.89	-	-	95.63	85.74	-	98.2	98.66	-	-
	Crop Ins	126.48	-	-	99.97	109.65[a]	-	102.95	106.21	-	-
	GRIP Clients	27	-	-	45	28	-	61	48	-	-
	Crop Ins Clients	805	-	-	972	1082	-	1140	1103	-	-

[a] Mean yield significantly higher with 95% confidence, based on t-test of difference between means

Table 4.5 Comparison of GRIP and Crop Insurance Mean Yield Index
Barley

		RA 2	RA 5	RA 7	RA 8	RA 9	RA 10	RA 11	RA 12	RA 13	RA 15	RA 19
1991	GRIP	112.32[a]	86.89	88.73	86.64	-	75.85	91.38	97.69	76.28	62.61	95.79
	Crop Ins	102.43	95.67	100.2[a]	94.21	-	92.45	90.29	100.97	71.94	77.38[a]	102.54
	GRIP Clients	22	30	39	34	-	27	67	63	53	39	26
	Crop Ins Clients	947	1205	1433	1077	-	331	1153	1060	1350	598	362
1992	GRIP	91.49	68.82	71.46	85.65	110.4	73.3	83.87	84.75	74.4	57.27	-
	Crop Ins	89.87	79.7	91.2[a]	97.86	97.63	83.18	97.5[a]	83.76	73.5	74.45[a]	-
	GRIP Clients	40	27	37	29	22	28	41	42	48	95	-
	Crop Ins Clients	804	1003	1222	924	549	236	968	633	863	532	-
1993	GRIP	132.6	98.34	91.26	96.91	-	79.61	102.75	106.52	112.14	95.81	-
	Crop Ins	122.12	106.1	101.2	103.1	-	100.2[a]	111.37	110.63	108.19	100.38	-
	GRIP Clients	48	31	38	41	-	27	47	59	69	87	-
	Crop Ins Clients	1014	1125	1366	1047	-	219	946	1040	1148	585	-
1994	GRIP	125	80.58	64.39	79.67	-	-	84.84	82.62	85.4	90.72	-
	Crop Ins	115.4	94.04	91.67[a]	88.44	-	-	86.88	96.27[a]	96.99	91.79	-
	GRIP Clients	29	22	27	40	-	-	23	46	32	42	-
	Crop Ins Clients	856	963	1248	962	-	-	708	958	863	384	-

[a] Mean yield significantly higher with 95% confidence, based on t-test of difference between means

Table 4.6 Comparison of GRIP and Crop Insurance Mean Yield Index
Canola

		RA 2	RA 5	RA 7	RA 8	RA 9	RA 11	RA 12	RA 13	RA 15	RA 19	RA 22
1991	GRIP	-	-	-	-	-	101.9	100.51	70.97	67.78	92.77	-
	Crop Ins	-	-	-	-	-	106.8	109.9[a]	84.26[a]	84.04[a]	108.3	-
	GRIP Clients	-	-	-	-	-	21	58	52	31	40	-
	Crop Ins Clients	-	-	-	-	-	499	1061	1503	446	590	-
1992	GRIP	-	-	-	101.18	-	-	86.13	67.04	69.47	-	-
	Crop Ins	-	-	-	91.99	-	-	86.94	81.86[a]	95.66[a]	-	-
	GRIP Clients	-	-	-	25	-	-	43	50	53	-	-
	Crop Ins Clients	-	-	-	613	-	-	639	937	402	-	-
1993	GRIP	-	-	85.64	99.85	90.02	107.43	104.6	88.96	88.83	85.68	95.73
	Crop Ins	-	-	99.04[a]	102.44	107.85[a]	108.85	108.88	100.46[a]	99.74[a]	98.73	109.6
	GRIP Clients	-	-	23	41	23	33	68	102	69	44	23
	Crop Ins Clients	-	-	746	851	704	563	1197	1541	521	651	167
1994	GRIP	123.0	84.71	-	97.74	93.95	78.61	93.35	90.42	91.98	76.91	-
	Crop Ins	117.6	101.4[a]	-	96.8	96.97	95.34[a]	98.83	95.8	89.84	101.7[a]	-
	GRIP Clients	30	23	-	43	23	21	70	72	62	38	-
	Crop Ins Clients	709	861	-	962	869	594	1273	1491	522	598	-

[a] Mean yield significantly higher with 95% confidence, based on t-test of difference between means

GRIP and crop insurance producers, only 21 had showed a higher mean for the GRIP group, and 51 showed a lower standard deviation for the GRIP group. In both cases, this is insufficient statistical evidence to reject the hypothesis that the mean and standard deviation of yields for GRIP and crop insurance producers are equal. This contradicts the hypothesis that producers who insure their crops have lower yields and greater standard deviations than non-insuring producers, and suggests adverse selection is not a significant problem in the Alberta crop insurance program.

Coverage Levels

An important consideration in the operation of the crop insurance system is the mechanism that establishes and adjusts the level of insurable yield (coverage level) within an area. In producer interviews, adjustments to coverage and insufficient coverage were consistently cited as being of primary concern. To investigate how well coverage adjustments, analyses of historical data on (*i*) adjustments within risk areas, (*ii*) adjustments for newer participants relative to established participants, and (*iii*) adjustments under a fully individualized system relative to the current system were made.

(*i*) Variation of Yields Within Risk Areas

The level of variation within a risk area is important in determining the nature of the adjustment mechanism, because individual coverage is dependent on an individual producer's yield relative to the risk area average yield. A producer's level of insurable yield remains constant provided his percentage change in yield from year to year is the same as the percentage change in the risk area average yield. However, if a producer's percentage yield increases at a lower rate than the risk area average, the producer's coverage level will be adjusted downward. In particular, if the producer's yield decreases when the risk area average increases, the producer's coverage level will decrease. If a risk area is structured in such a way that it includes a zone that is unlike the surrounding area, then the yields within the distinct zone may not be well correlated with the risk area average. Where this occurs, producers in the distinct area can face volatile and adverse adjustments in coverage through indexing. In other words, if individual yields (and therefore coverage indexes) and risk area averages are highly correlated, coverage adjustments will be stable and reflect the producer's relative risk. However, if individual yields are not well correlated with the risk area average, coverage adjustments can be biased and erratic.

To examine the extent to which indexing is causing volatile and adverse coverage adjustments, an analysis was done of coverage adjustments over the last 10 years. Data on risk area averages and township averages were assembled for the period 1990-99, with township data limited to townships in which there were at least 3 participants per year. For each township in which data was available, the correlation coefficient between township and risk area average, the standard deviation of township yield, and the township coefficient of variation was calculated. This procedure was repeated for red spring wheat, barley, and canola.

The results are presented below. Figures 4.1, 4.2, and 4.3 show the standard deviation and the coefficient of variation (standard deviation as a percentage of the mean) by risk area for red spring

wheat, canola, and barley. The key statistics in these charts is the coefficient of variation (CV), which is directly comparable across risk areas. Also, note the risk areas for which the CV is high across crops. A high CV across crops suggests that the risk area is constructed in such a way that the yield average used to index producers is subject to great fluctuation, which makes producers' individual coverage levels volatile. Using this visual comparison across risk areas, risk areas 4, 9, and 13 show up as having relatively large CV's for all 3 crops. Risk areas 18 and 22 had large CV's for both wheat and canola, and barley data was unavailable. These observations are not dependant upon township level data sources, so the risk areas in which little township-level data was available (as shown in the following section) should be given the same weight as risk areas in which more township level data was available.

The correlation coefficients between individual townships and their associated risk area averages for red spring wheat, barley, and canola are summarized below in Table 4.7. For each crop, the first column is the percentage of townships in the risk area reporting negative or very low correlation to the risk area average, and the second column is the percentage of reporting townships that had low correlation (.5 - .749) with the risk area average. To determine the percentage of townships that had very low or low correlation, the first two columns can simply be added.

Table 4.7 shows that some risk areas have significant portions that experience low correlation with the risk area average. To make a general statement about low correlation, the data for a given risk area should be compared across crops. Visual inspection of Table 4.7 indicates that risk areas 4, 9, 13, and 19 have a reasonable number of townships reporting (do not suffer from small sample bias) *and* have 30-50% of townships with low or very low correlation with the risk area average. The inference is that there are producers in these risk areas whose coverage levels vary erratically. In particular, townships that have a low correlation with the risk area average and a risk area average with a high coefficient of variation (as determined above) must contain producers who have volatile yield coverage levels.

Figure 4.1

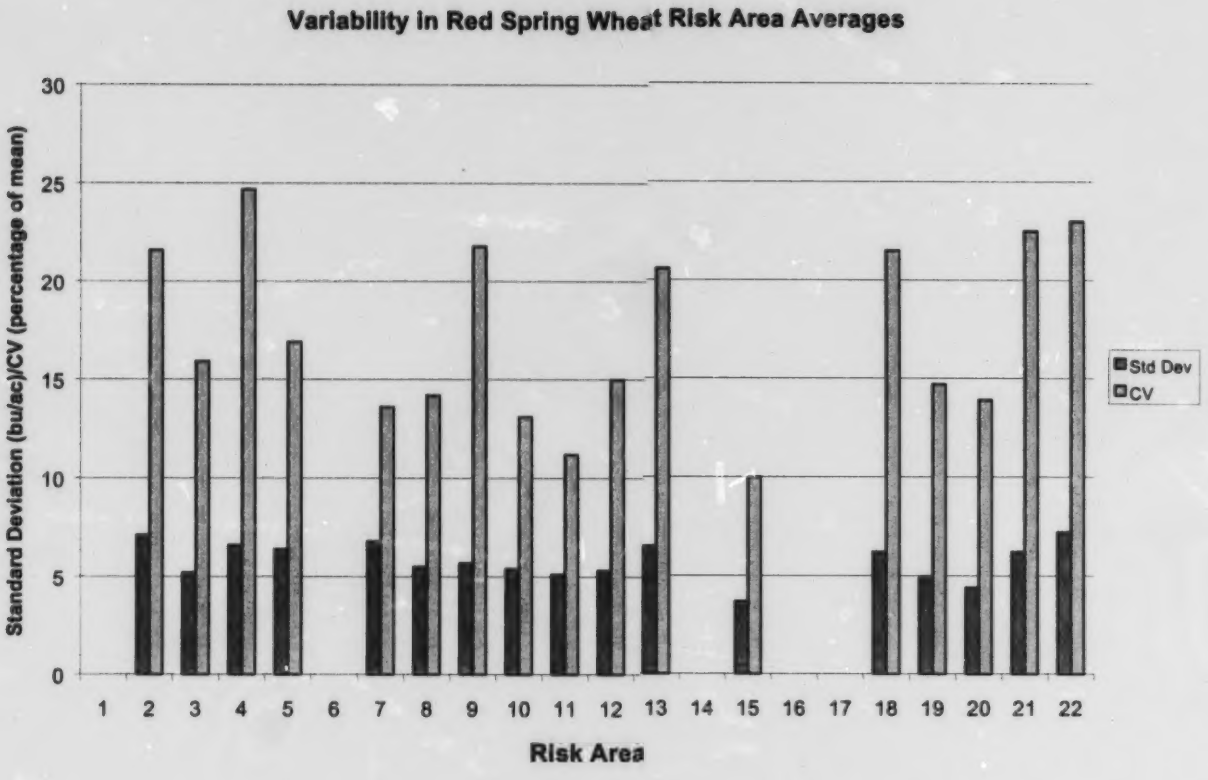

Variability in Red Spring Wheat Risk Area Averages
Standard Deviation (bu/ac)/CV (percentage of mean)
30
25
20
15
10
5
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
Risk Area
Std Dev
CV

Figure 4.2

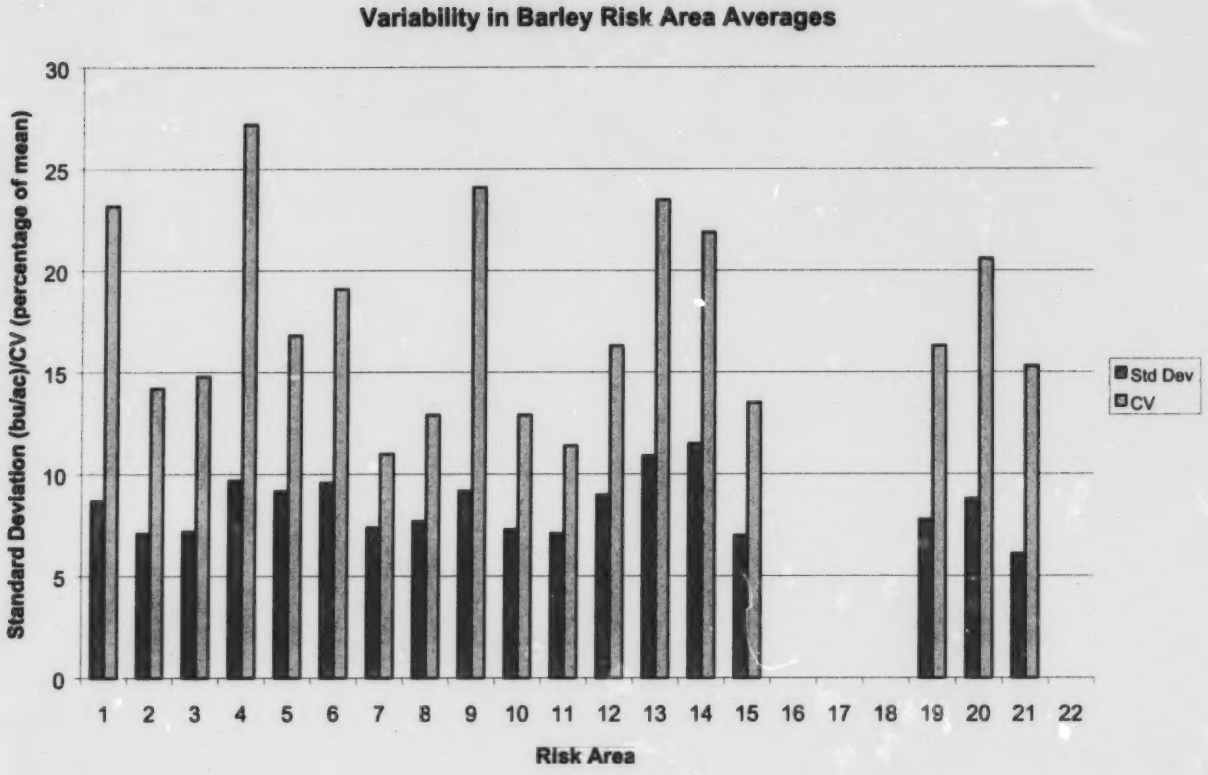

Variability in Barley Risk Area Averages
Standard Deviation (bu/ac)/CV (percentage of mean)
30
25
20
15
10
5
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
Risk Area
Std Dev
CV

Figure 4.3

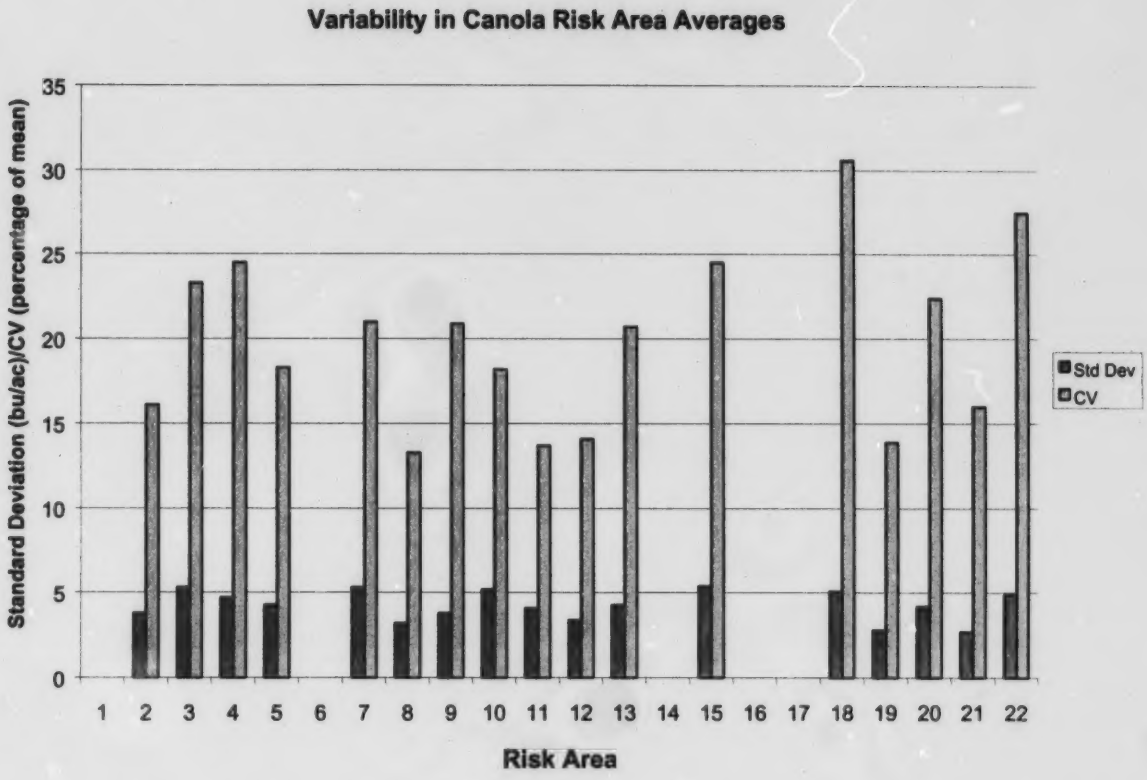

Variability in Canola Risk Area Averages
Standard Deviation (bu/ac)/CV (percentage of mean)
35
30
25
20
15
10
5
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
Risk Area
Std Dev
CV

Table 4.7

Risk Area	Wheat			Barley			Canola		
	Correlation -.43 - .499 (% townships)	Correlation .5 - .749 (% townships)	Townships Reporting	Correlation -.41 - .499 (% townships)	Correlation .5 - .749 (% townships)	Townships Reporting	Correlation -.6 - .499 (% townships)	Correlation .5 - .749 (% townships)	Townships Reporting
1			0	0.00	100.00	1			0
2	6.52	20.65	92	38.18	35.45	110	9.09	50.00	22
3	6.02	31.33	83	18.75	50.00	16	0.00	50.00	2
4	15.69	25.49	102	0.00	66.67	3	0.00	100.00	1
5	6.58	26.32	76	22.77	34.65	101	19.67	39.34	61
6			0	16.67	41.67	12			0
7	0.00	24.00	25	4.11	39.73	73	1.69	16.95	59
8	9.46	16.22	74	14.46	26.51	83	8.96	50.75	67
9	9.16	47.33	131	14.89	27.66	47	22.45	42.86	49
10	50.00	50.00	2	21.05	52.63	19	0.00	0.00	3
11	14.81	48.15	27	19.19	43.43	99	15.63	32.81	64
12	1.15	9.20	87	4.88	15.85	82	11.49	27.59	87
13	8.70	22.46	138	13.16	24.56	114	5.52	33.10	145
14			0	0.00	0.00	2			0
15	77.78	22.22	9	34.78	41.30	46	15.79	28.95	38
16			0			0			0
17			0			0			0
18	14.29	42.86	7			0	20.00	20.00	5
19	22.64	33.96	53	33.33	33.33	15	37.33	37.33	75
20	42.86	42.86	7	100.00	100.00	1	5.26	15.79	19
21	25.00	25.00	8	5.26	5.26	19	20.69	51.72	29
22			0			0	5.88	5.88	17

(*ii*) Coverage Adjustments for Newer Insureds

The transition of new producers into the crop insurance program is a source of concern for some. The concern is that initial "start-up" levels of coverage are not representative of producers' actual yields. AFSC recently changed its start-up procedure so that producers are phased into the program based on yield index averages from surrounding townships. Previously, new patrons were initially assigned an index of 1.0. An assessment was made of how this new start-up procedure is working relative to the former procedure. The assessment was made by comparing the new and former start-up yield index procedures with actual yield records 7-9 years after start-up. The criterion for comparison is how well the new start-up procedure predicts actual (uncushioned) yields after the producer has gone off the start-up index, relative to the 100 benchmark system.

The analysis was run in each risk area for red spring wheat, barley, and canola (where sufficient data was available). Detailed results of this procedure are attached in Appendix F. The appendix contains a table and figure for each risk area and crop. The "actual start-up index" column (labelled as "predicted" in the graph) indicates the start-up index a group of producers would have had. The column labelled "uncushioned index" ("actual" in the graph") gives the actual average yield index that was obtained by that group of producers after 7-9 years of individual yield records. The rows of the table are sorted by the start-up index that would occur under the new system The more closely the "predicted" line tracks the "actual" line, the more effective the new start-up coverage system was at predicting actual individual yields. This is contrasted with the index 1 line that illustrates coverage under the old start-up system.

In most cases, the new startup coverage system is more effective in predicting the actual index in 7-9 years than was the index 1.0 benchmark. This is expected because, rather than arbitrarily assigning a startup index, the new system uses yields from the surrounding area which should be indicative of local agronomic conditions. However, the results vary by risk area and crop, and there are instances in which the township average system for start-up coverage is not a good predictor of yields. This may be due to the fact that only 7-9 years of individual yield data have been observed, while the township averages are based on 20 years data. Also, the township average procedure may include peripheral townships that are not well correlated with a start-up producer's yields.

Appendix G contains colour coded maps identifying startup coverage indexes for townships in all 22 risk areas for red spring wheat, barley, and canola (where data is available). A second section of maps gives the start-up coverage indexes, but is colour-coded to show the townships in which the township average start-up coverage index was 20% greater than or 20% less than the actual yield index after the rows of the table are sorted by what the start-up index would have been under the new system after 7-9 years of yield history. These maps therefore highlight the townships for which the new start-up procedure has not been as good an estimator of actual yield.

(*iii*) Coverage Adjustments Under the Current vs Fully Individualized Systems

Under individual coverage adjustment, a producer's individual yield history is used in establishing coverage, rather than his yield relative to the risk area average yield. The impact of switching to fully individualized coverage adjustment relative to the current system was analyzed using data from patrons with 5 and 10 years of data, respectively. Initially, under the fully individualized program, producers' yields are underwritten using the 5 year average of the risk area normal. As the producer accumulates individual yield history, risk area normal yields are dropped until, by year 5, coverage is based entirely on individual yields. Data for the analysis was based on continuous producer data for 5 and 10 years for red spring wheat, barley, and canola. The two coverage adjustment systems were evaluated strictly on the level of coverage offered to the producer.

The results of this procedure are presented in tables 4.8 and 4.9. Table 4.8 presents results evaluated over 10 years of data. The columns indicate the percentage of individual producers that would have received more coverage under the current system or under a fully individualized system. The table suggests that, on average, most producers are either better off or no worse off under the current system of coverage adjustment. This is particularly the case with barley. However, recent years have tended to favour fully individualized coverage, particularly in wheat. Table 4.9 presents the results using patrons with 5 years continuous data. A much greater number of producer records were available with 5 years data. The results using only the more recent time period show that canola producers would have received more coverage under fully individualized coverage. The average results for wheat and barley are similar as under the 10 year data analysi; however in both wheat and barley, fully individualized coverage would have provided more coverage in recent years.

Fully individualized coverage adjustments tend to provide greater levels of coverage in periods of high yields than the current system does. However, coverage can decrease steeply when yields decline. These results seem to suggest that yields are sufficiently volatile that the current coverage adjustment system would be preferred to the fully individualized system. The most recent 5 years' experience with canola suggest individualized adjustment would have given greater coverage; however, this precisely illustrates the point that high yields favour fully individualized coverage. The most recent 5 years have generally been positive for canola yields because of weather conditions and improvements in seed genetics and technology.

Table 4.8

	Wheat				Barley				Canola			
	% Current System	% No Change	% Fully Individual	Producers Reporting	% Current System	% No Change	% Fully Individual	Producers Reporting	% Current System	% No Change	% Fully Individual	Producers Reporting
1991	75	21.30	3.70	676	26.72	49.47	23.81	378	32.67	39.40	27.93	401
1992	63.31	33.43	3.25	676	31.75	39.42	28.84	378	39.90	34.91	25.19	401
1993	39.05	39.20	21.75	676	40.74	38.89	20.37	378	36.91	35.66	27.43	401
1994	42.31	28.40	29.29	676	51.32	35.98	12.70	378	41.65	33.92	24.44	401
1995	31.21	26.33	42.46	676	43.12	39.95	16.93	378	34.66	31.92	33.42	401
1996	37.57	22.49	39.94	676	53.17	34.66	12.17	378	37.66	35.66	26.68	401
1997	27.81	27.37	44.82	676	43.92	42.86	13.23	378	33.92	38.65	27.43	401
1998	20.86	34.91	44.23	676	39.42	46.30	14.29	378	34.41	40.40	25.19	401
1999	17.46	34.47	48.08	676	32.01	48.68	19.31	378	35.66	37.66	26.68	401
2000	16.57	34.32	49.11	676	37.04	47.88	15.08	378	35.16	39.15	25.69	401
Avg.	37.12	30.22	32.66		39.92	42.41	17.67		36.26	36.73	27.01	

Table 4.9

	Wheat				Barley				Canola			
	% Current System	% No Change	% Fully Individual	Producers Reporting	% Current System	% No Change	% Fully Individual	Producers Reporting	% Current System	% No Change	% Fully Individual	Producers Reporting
1996	61.79	34.91	3.30	3185	46.98	46.33	6.70	3389	32.94	49.96	17.10	3339
1997	43.67	35.67	20.66	3185	35.47	54.88	9.65	3389	33.75	42.35	23.90	3339
1998	23.36	46.72	29.92	3185	30.78	53.97	15.26	3389	29.86	39.95	30.19	3339
1999	21.04	35.60	43.36	3185	30.19	45.03	24.79	3389	23.75	34.65	41.60	3339
2000	28.13	26.37	45.49	3185	37.62	36.47	25.91	3389	23.72	28.12	48.16	3339
Avg	35.60	35.86	28.55		36.21	47.34	16.46		28.81	39.01	32.19	

Price Election Levels

Alberta crop insurance price election levels and actual net payments to producers are shown below in Tables 4.10, 4.11 and 4.12 for wheat, barley and canola.

Table 4.10 Price Election Levels and CWB Payments, #2 CWRS Wheat

Crop Year	Price Election Level ($/bu)		CWB Total Payment to Producers	Transportation Cost	Net Payment to Producers
	Low	High			
1995/96	$3.40	$3.43	$6.84	$1.20	$5.64
1996/97	$3.18	$4.54	$5.57	$1.11	$4.46
1997/98	$3.02	$4.30	$5.12	$1.10	$4.02
1998/99*	$2.50	$3.57	$4.90	$1.10	$3.80
1999/2000*	$2.86	$4.08	$4.54	$1.10	$3.44

*Expected Pool Return. **Pool Return Outlook.
Source: AFSC, Canadian Wheat Board.

Table 4.11 Price Election Levels and CWB Payments, #1 CW Barley

Crop Year	Price Election Level ($/bu)		CWB Total Payment to Producers	Transportation Cost	Net Payment to Producers
	Low	High			
1995/96	$1.61	$1.85	$4.47	$0.96	$3.51
1996/97	$2.02	$2.90	$3.28	$0.88	$2.40
1997/98	$1.61	$2.29	$2.63	$0.88	$1.77
1998/99*	$1.65	$2.35	$3.13	$0.88	$2.25
1999/2000*	$1.68	$2.39	$2.94	$0.88	$2.06

*Expected Pool Return. **Pool Return Outlook.
Source: AFSC, Canadian Wheat Board.

Table 4.12 Price Election Levels and Canola Cash Prices

Crop Year	Price Election Level		Average Close	Transportation Cost	Average Close (net of transportation costs)
	Low	High			
1995/96	$5.62	$6.89	$9.82	$1.00	$8.82
1996/97	$5.87	$8.39	$10.00	$0.92	$9.08
1997/98	$6.03	$8.62	$9.52	$0.91	$8.61
1998/99	$5.65	$8.05	$8.49	$0.92	$7.57
1999/2000*	$5.56	$7.94	$6.54	$0.92	$5.62

*Prices up to July 20/2000.

Data needed to compare price election levels, especially transportation costs, with actual payments to producers was extremely difficult to obtain, and therefore limited the analysis. The transportation cost in the above tables was provided by the Canadian Wheat Board and is an average cost for Alberta for all three crops. The tables above shows that, with the exception of the 1995/96 crop year, the net payment from the CWB or the net cash price generally falls between the low and high price election levels. This means that the price election levels for the three major crops somewhat accurately reflect the value of the crop to the producer. However, in the 1996/97 crop year canola price election levels were lower than actual canola prices, and in 1998/99 wheat price election levels were below the Estimated Pool Return.

Empirical Analysis Summary and Conclusions

The empirical research prepared for this review suggests the following:.

- Adverse is probably not a significant problem in Alberta crop insurance

The analysis of adverse selection consisted of comparing the yields of producer that insure with the general population of producers. Two separate analyses were conducted- one comparing crop insurance yields with Statistics Canada yields, and another comparing crop insurance yields with those of producers who only insured during the GRIP period. In both cases, the comparisons failed to show significant statistical differences in average yields or variability in yields between crop insurance and other producers. In some cases, the analyses provided weak evidence that crop insurance producers actually have higher yields than the general population.

- There are risk areas with significant variability in average yields and townships within risk areas that are poorly correlated with the associated risk area average

A time series of township and risk area data was analyzed to assess volatility in coverage levels. Risk area averages over the period were analyzed to determine their standard deviation and coefficient of variation. This analysis found some risk areas that had relatively high coefficients of variation (variability as a percentage of mean yield) across the 3 crops analyzed. This observation suggests that there may be a problem in the structure of the risk area, given that it is relatively risky across all 3 crops. Secondly, a sample of townships was drawn from the risk areas and the correlation coefficient between township average yields and risk area average calculated. In many cases, too few townships were drawn from a given risk area to provide an accurate comparison. However, a number of risk areas had a large number of townships reporting. In a number of cases, poor correlation was found between township averages and the risk area average. In particular, some of the same risk areas that had volatile risk area averages had poor correlation with the townships. These risk areas (4, 9, and 13) will tend to give volatile coverage adjustments.

- The township averaging procedure for start-up coverage for new insureds is working better than benchmarking at index 1.0

The analysis of the new start-up coverage program involved simulating the start-up coverage new insureds would have faced 7-8 years ago, and determining how this implicit prediction of future yields compared with actual yields. In virtually all cases, this procedure appears to be a better predictor than indexing all new producers at 1.0. Thus, it appears that the new start-up coverage procedure is working.

- On average, producers have more coverage using the current system of coverage adjustment than they would under fully individualized coverage

The average level of coverage based on fully individualized adjustment and on the current system

of coverage adjustment were compared using individual records for red spring wheat, barley, and canola for periods of 5 and 10 years. In each year, the percentage of producers receiving more coverage from the current system, more coverage from a fully individualized system, and equal coverage were recorded. Over the 10 year period, across all crops, more producers were better off with the current coverage adjustment system than a fully individual system. Over the most recent 5 years, only canola insurers would have been better off with a fully individualized system. Overall, these results suggest that the current system of coverage adjustment is performing well relative to fully individualized coverage adjustment.

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APPENDIX A

Designated grades for grade adjustments

Crop	Designated Grade
Red Spring Wheat	No. 2 Canada Western Red Spring
Durum Wheat	No. 2 Canada Western Amber Durum
Utility Wheat	No. 2 Canada Utility
Soft White Spring Wheat	No. 2 Canada Western Soft White Spring
Red Winter Wheat	No. 2 Canada Western Red Winter
Canada Prairie Spring Wheat	No. 2 Canada Prairie Spring
Extra Strong Red Spring Wheat	No. 2 CW EX ST
Oats	No. 3 Canada Western
Barley	No. 1 Canada Western
Mixed Grain	Grade not applicable
Spring Rye	No. 2 Canada Western
Fall Rye	No. 2 Canada Western
Spring Triticale	No. 2 Canada
Winter Triticale	No. 2 Canada
Canola	No. 1 Canada
Flax	No. 1 Canada Western
Brown Mustard	No. 1 Canada
Oriental Mustard	No. 1 Canada
Yellow Mustard	No. 1 Canada
Dry Beans	No. 1 Canada
Faba Beans	No. 3 Canada
Field Peas	Feed Grade
Lentils	No. 2 Canada
Grain Corn	No. 2 CW
Fresh Vegetables	No. 1 Canada
Table Potatoes	No. 2 Canada
Processing Potatoes	Grade not applicable
Red Fescue	No. 2 Common
Safflower	Grade not applicable
Sugar Beets	Grade not applicable
Sunflowers	Grade not applicable
Pedigreed Seed	When the minimum germination set by AFSC in accordance with the Canada Seeds Act is not met, the Designated Grade is No. 1 Canada for cereals, oilseeds and pulse crops; No. 2 Canada for timothy, alfalfa and creeping red fescue crops; Certified Class for seed potatoes.

APPENDIX B

LETHBRIDGE

Year	Acres	Risk	Premium	Indemnities	----- Loss Ratio -----	
					Annual	Cumulative
		$000	$000	$000	(indemnities/premiums*100)	
1978	1,850,407	90,379	8,244	1,018	12.3	12.3
1979	1,906,939	99,838	8,810	6,423	72.9	43.6
1980	2,148,355	133,552	12,014	2,528	21.0	34.3
1981	2,258,146	167,458	13,768	967	7.0	25.5
1982	2,292,503	189,884	13,671	6,218	45.5	30.4
1983	2,467,404	217,907	14,623	9,083	62.1	36.9
1984	2,777,237	258,098	15,325	96,089	627.0	141.5
1985	3,433,190	297,767	23,014	109,233	474.6	211.5
1986	3,639,299	276,894	30,638	20,936	68.3	180.2
1987	3,269,041	191,208	24,967	8,492	34.0	158.1
1988	3,523,866	214,779	24,555	46,205	188.2	162.0
1989	3,568,930	308,059	36,868	33,058	89.7	150.2
1990	3,316,164	280,514	29,862	19,733	66.1	140.4
1991	3,550,979	232,606	24,793	5,464	22.0	130.0
1992	3,748,125	251,805	26,756	47,789	178.6	134.2
1993	3,299,472	250,529	27,940	19,482	69.7	128.8
1994	2,868,119	207,374	28,810	4,264	14.8	119.8
1995	2,534,590	212,330	28,942	4,155	14.4	112.1
1996	2,040,744	224,108	26,714	3,534	13.2	105.8
1997	2,684,117	294,243	34,890	4,692	13.4	98.7
1998	2,792,794	299,400	32,834	4,243	12.9	92.9
1999	2,831,070	319,169	31,568	5,377	17.0	88.3
Total	62,801,491	5,017,901	519,606	458,985		88.3

RED DEER

Year	Acres	Risk	Premium	Indemnities	----- Loss Ratio -----	
					Annual	Cumulative
		$000	$000	$000	(indemnities/premiums*100)	
1978	1,972,103	87,149	7,396	4,217	57.01	57.0
1979	2,000,109	95,575	7,866	2,224	28.27	42.2
1980	2,164,668	128,410	9,987	6,399	64.07	50.8
1981	2,352,648	169,185	12,080	4,054	33.56	45.3
1982	2,422,108	192,092	12,583	6,569	52.21	47.0
1983	2,577,665	220,190	13,113	9,005	68.67	51.5
1984	2,834,074	247,563	12,922	48,636	376.40	106.8
1985	3,098,871	262,775	15,382	67,420	438.30	162.6
1986	3,258,653	245,454	20,550	23,856	116.08	154.1
1987	3,089,119	172,387	17,178	15,816	92.07	145.8
1988	3,189,765	188,461	18,148	29,713	163.72	148.0
1989	3,273,200	270,309	25,147	35,236	140.12	146.9
1990	3,095,959	241,150	23,136	31,101	134.43	145.4
1991	3,316,016	207,185	18,960	8,895	46.91	136.7
1992	3,293,298	220,332	19,974	38,900	194.75	141.6
1993	3,172,046	234,300	23,226	17,409	74.96	135.6
1994	2,746,550	179,466	22,768	8,085	35.51	127.5
1995	2,619,766	196,770	25,052	6,428	25.66	119.1
1996	2,233,434	231,141	24,506	6,697	27.33	112.3
1997	2,434,585	240,899	25,137	8,551	34.02	106.8
1998	2,570,857	249,994	25,431	12,683	49.87	103.0
1999	2,456,810	249,851	22,751	4,967	21.83	98.4
Total	60,172,304	4,530,637	403,293	396,859		98.4

CAMROSE

Year	Acres	Risk	Premium	Indemnities	----- Loss Ratio -----	
					Annual	Cumulative
		$000	$000	$000	(indemnities/premium*100)	
1978	1,468,631	57,564	6,346	6,242	98.36	98.4
1979	1,429,426	62,873	6,400	3,493	54.58	76.4
1980	1,655,405	87,246	8,256	3,075	37.24	61.0
1981	1,765,764	110,691	9,491	4,752	50.06	57.6
1982	1,783,594	122,193	10,033	6,119	60.98	58.4
1983	1,970,177	149,203	11,699	24,483	209.26	92.2
1984	2,335,114	175,049	13,864	9,086	65.54	86.6
1985	2,657,694	205,098	15,934	19,747	123.93	93.9
1986	2,806,987	208,766	16,994	11,061	65.09	88.9
1987	2,642,546	156,528	14,252	16,814	117.98	92.6
1988	3,261,804	208,195	19,331	14,038	72.62	89.7
1989	3,208,483	273,054	23,622	25,837	109.38	92.7
1990	3,103,104	243,750	23,162	11,424	49.32	87.1
1991	3,217,849	217,014	20,746	14,982	72.22	85.5
1992	3,302,375	231,937	23,307	42,215	181.13	95.5
1993	3,343,533	266,318	28,344	12,464	43.97	89.7
1994	2,678,620	185,323	22,074	7,081	32.08	85.0
1995	2,458,806	212,165	23,058	17,954	77.86	84.5
1996	2,431,468	270,892	27,620	12,351	44.72	81.1
1997	2,577,138	276,093	26,881	14,980	55.73	79.2
1998	3,017,055	308,986	30,083	28,315	94.12	80.3
1999	2,964,294	317,728	29,191	6,200	21.24	76.1
Total	56,079,867	4,346,667	410,686	312,712		76.1

FAIRVIEW

Year	Acres	Risk	Premium	Indemnities	----- Loss Ratio -----	
					Annual	Cumulative
		$000	$000	$000	(indemnities/premium*100)	
1978	571,687	20,295	3,070	2,334	76.04	76.0
1979	512,690	19,385	2,950	1,726	58.53	67.5
1980	647,966	30,256	4,270	2,077	48.64	59.6
1981	608,220	33,807	4,385	3,378	77.03	64.8
1982	674,313	40,315	5,032	10,506	208.77	101.6
1983	1,239,473	73,194	13,743	7,347	53.46	81.8
1984	1,312,959	77,074	14,480	13,259	91.57	84.8
1985	1,448,188	94,035	16,086	33,588	208.80	115.9
1986	1,470,172	91,450	17,796	25,018	140.58	121.3
1987	1,459,710	69,261	14,825	8,277	55.83	111.3
1988	1,359,988	72,058	15,756	3,487	22.13	98.8
1989	1,390,955	99,070	19,412	10,217	52.63	92.0
1990	1,338,724	86,965	15,602	5,967	38.24	86.3
1991	1,429,251	79,984	11,862	4,947	41.71	83.0
1992	1,176,331	70,918	11,285	13,718	121.56	85.5
1993	1,164,743	78,944	12,191	11,108	91.12	85.9
1994	773,350	49,918	9,994	4,003	40.06	83.5
1995	701,953	55,557	9,571	3,066	32.03	81.1
1996	605,781	58,934	9,098	11,406	125.36	83.0
1997	797,448	87,935	13,064	23,973	183.50	88.8
1998	1,088,198	113,567	17,140	15,660	91.36	89.0
1999	1,195,519	127,154	20,385	12,314	60.41	86.8
Total	22,967,619	1,530,076	261,997	227,375		86.8

APPENDIX C
ALBERTA HIGH RISK SUBSIDY PROGRAM
1975 - 1993

YEAR	TRIGGER LEVEL: PREMIUM GREATER THAN		ANNUAL AMOUNT	CUMULATIVE AMOUNT
	60% Coverage Level	*70% Coverage Level*		
1975	6.0%*	7.5%*	$942,711	$942,711
1976	6.0%*	7.5%*	$871,043	$1,813,754
1977	6.0%*	7.5%*	$936,661	$2,750,415
1978	6.0%*	7.5%*	$1,194,799	$3,945,214
1979	6.0%*	7.5%*	$1,426,396	$5,371,610
1980	6.0%*	7.5%*	$1,500,884	$6,872,494
1981	6.0%*	7.5%*	$1,421,741	$8,294,235
1982	6.0%*	7.5%*	$1,375,895	$9,670,130
1983	6.0%	8.0%	$3,973,475	$13,643,605
1984	6.0%	7.5%	$3,923,579	$17,567,184
1985	6.0%	8.0%	$4,389,064	$21,956,248
1986	6.0%	8.0%	$5,428,007	$27,384,255
1987	6.0%	8.0%	$4,314,965	$31,699,220
1988	6.0%	8.0%	$5,528,741	$37,227,961
1989	6.0%	8.0%	$7,350,982	$44,578,943
1990	6.0%	8.0%	$3,739,623	$48,318,566
1991	7.0%	9.0%	$1,754,245	$50,072,811
1992	8.0%	10.0%	$872,822	$50,945,633
1993	9.0%	11.0%	$787,910	$51,733,543

* Half of premium in excess of these levels was paid. From 1983 on, the full premium in excess of the trigger level was paid.
Source: AFSC, Research and Development.

APPENDIX D
Federal and Provincial Reinsurance Funds
Fiscal Years 1990 to 1999

REINSURANCE FUND OF ALBERTA Fiscal year ending March 31										
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Opening surplus (deficit)	($29,796,391)	($38,765,291)	($14,264,819)	$755,522	($16,133,396)	$22,366	$12,915,002	$28,927,288	$44,512,000	$53,386,000
Current year contributions	$26,644,097	$23,203,804	$15,020,341	$15,027,713	$14,919,814	$12,892,636	$16,012,286	$16,245,129	$9,074,000	($22,000)
	($3,152,294)	($15,561,487)	$755,522	$15,783,235	($1,213,582)	$12,915,002	$28,927,288	$45,172,417	$53,586,000	$53,364,000
Transfers from (to) the corporation	($35,612,997)	$1,296,668	$0	($31,916,631)	$1,235,948	$0	$0	$0	$0	
Closing surplus (deficit)	($38,765,291)	($14,264,819)	$755,522	($16,133,396)	$22,366	$12,915,002	$28,927,288	$45,172,417	$53,586,000	$53,364,000
REINSURANCE FUND OF CANADA FOR ALBERTA										
	1990	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*
Opening surplus (deficit)	*($23,515,918)*	*($22,376,598)*	*$827,206*	*$15,847,547*	*($2,675,823)*	*$12,476,880*	*$25,369,516*	*$41,381,803*	*$59,122,000*	*$77,272,000*
Current year contributions	*$26,644,097*	*$23,203,804*	*$15,020,341*	*$15,027,713*	*$14,919,814*	*$12,892,636*	*$16,012,287*	*$16,245,129*	*$18,150,000*	*$34,000*
	$3,128,179	*$827,206*	*$15,847,547*	*$30,875,260*	*$12,243,991*	*$25,369,516*	*$41,381,803*	*$57,626,932*	*$77,272,000*	*$77,306,000*
Transfers from (to) the corporation	*($25,504,777)*	*$0*	*$0*	*($33,551,083)*	*$232,889*	*$0*	*$0*	*$0*	*$0*	*$0*
Closing surplus (deficit)	*($22,376,598)*	*$827,206*	*$15,847,547*	*($2,675,823)*	*$12,476,880*	*$25,369,516*	*$41,381,803*	*$57,626,932*	*$77,272,000*	*$77,306,000*

APPENDIX E

Comparison of GRIP and Crop Insurance Yield Index Standard Deviation
Red Spring Wheat

		RA 2	RA 4	RA 5	RA 8	RA 9	RA 11	RA 12	RA 13	RA 15	RA 19
1991	GRIP	22.32[a]	65.5	23.42[a]	33.55	36.38	35.53	22.75[a]	30.32	45.82	37.71
	Crop Ins	32.49	61.98	32.05	29.9	35.95	40.91	32.0	31.73	42.14	38.71
	GRIP Clients	30	34	29	49	48	24	99	73	25	50
	Crop Ins Clients	1131	1094	1058	1149	1342	528	1297	1721	316	668
1992	GRIP	44.92	48.12	39.83	37.22	41.19	27.38	22.63	28.74	32.13	32.83
	Crop Ins	43.57	44.56	36.62	27.43[a]	35.11	34.53	24.26	30.17	34.7	32.78
	GRIP Clients	36	28	32	57	43	22	64	91	84	33
	Crop Ins Clients	957	999	924	1075	1304	511	880	1269	360	533
1993	GRIP	45.75	64.33	38.51	29.41	37.39	36.83	27.62	41.41	36.43	44.64
	Crop Ins	46.85	57.81	35.67	27.0	44.77	29.52	28.51	39.43	42.01	38.17
	GRIP Clients	39	24	30	62	44	27	81	111	54	30
	Crop Ins Clients	1108	946	980	1158	1331	483	1349	1582	348	549
1994	GRIP	34.71	-	-	29.92	37.04	-	32.35	57.3	-	-
	Crop Ins	37.61	-	-	30.51	40.84	-	30.64	38.87[a]	-	-
	GRIP Clients	27	-	-	45	28	-	61	48	-	-
	Crop Ins Clients	805	-	-	972	1082	-	1140	1103	-	-

[a] Standard deviation significantly smaller with 95% confidence, based on F-test of ratio of standard deviations

Comparison of GRIP and Crop Insurance Yield Index Standard Deviation
Barley

		RA 2	RA 5	RA 7	RA 8	RA 9	RA 10	RA 11	RA 12	RA 13	RA 15	RA 19
1991	GRIP	15.68 [a]	36.97	36.62	32.89	-	35.02	33.03	35.88	33.21	39.57	39.61
	Crop Ins	34.31	32.24	32.4	28.31	-	45.73	37.59	38.99	38.17	45.3	46.6
	GRIP Clients	22	30	39	34	-	27	67	63	53	39	26
	Crop Ins Clients	947	1205	1433	1077	-	331	1153	1060	1350	598	362
1992	GRIP	46.09	46.76	34.22	36.34	47.03	27.47 [a]	33.9	32.86	36.15	32.49	-
	Crop Ins	46.25	38.59	33.32	31.26	41.7	38.71	38.69	32.27	35.6	35.26	-
	GRIP Clients	40	27	37	29	22	28	41	42	48	95	-
	Crop Ins Clients	804	1003	1222	924	549	236	968	633	863	532	-
1993	GRIP	50.3	45.79	30.76	35.46	-	41.95	37.31	27.49	42.82	36.26	-
	Crop Ins	48.4	40.02	24.73 [a]	32.12	-	41.91	33.69	33.0	44.41	39.62	-
	GRIP Clients	48	31	38	41	-	27	47	59	69	87	-
	Crop Ins Clients	1014	1125	1366	1047	-	219	946	1040	1148	585	-
1994	GRIP	38.03	41.97	36.49	34.33	-	-	25.17	27.61	40.06	40.7 [a]	-
	Crop Ins	40.77	32.57	28.81	28.11	-	-	30.75	30.81	38.07	56.01	-
	GRIP Clients	29	22	27	40	-	-	23	46	32	42	-
	Crop Ins Clients	856	963	1248	962	-	-	708	958	863	384	-

[a] Standard deviation in yield significantly lower with 95% confidence, based on F-test of ratio of standard deviations

Comparison of GRIP and Crop Insurance Yield Index Standard Deviation
Canola

		RA 2	RA 5	RA 7	RA 8	RA 9	RA 11	RA 12	RA 13	RA 15	RA 19	RA 22
1991	GRIP	-	-	-	-	-	40.95	29.78 [a]	37.94	36.25	40.33	-
	Crop Ins	-	-	-	-	-	39.32	64.9	40.27	40.74	46.08	-
	GRIP Clients	-	-	-	-	-	21	58	52	31	40	-
	Crop Ins Clients	-	-	-	-	-	499	1061	1503	446	590	-
1992	GRIP	-	-	-	41.8	-	-	45.3	36.43	42.58	-	-
	Crop Ins	-	-	-	38.39	-	-	36.03 [a]	37.69	51.65	-	-
	GRIP Clients	-	-	-	25	-	-	43	50	53	-	-
	Crop Ins Clients	-	-	-	613	-	-	639	937	402	-	-
1993	GRIP	-	-	33.33	42.37	37.79	33.55	29.63	47.76	40.31	52.31	62.35
	Crop Ins	-	-	30.27	30.33 [a]	42.27	35.72	30.49	40.13 [a]	41.91	49.82	55.69
	GRIP Clients	-	-	23	41	23	33	68	102	69	44	23
	Crop Ins Clients	-	-	746	851	704	563	1197	1541	521	651	167
1994	GRIP	51.09	33.4	-	33.17	46.29	31.84	38.11	42.64	34.5	49.69	-
	Crop Ins	43.19	34.94	-	29.21	41.04	36.21	32.65	36.0 [a]	37.13	46.19	-
	GRIP Clients	30	23	-	43	23	21	70	72	62	38	-
	Crop Ins Clients	709	861	-	962	869	594	1273	1491	522	598	-

[a] Standard deviation in yields significantly lower with 95% confidence, based on F-test of ratio of standard deviations

RISK AREA 1

Year	Acres			Risk			Premiums			Losses			Loss/Premium Ratio			Cumulative L/P Ratio %		
	Wheat	Barley	Canola	W	B	C	W	B	C	W	B	C	W	B	C	W	B	C
1978	5,266	25,719	631	$205,174	$992,196	$23,246	$14,488	$76,877	$3,250	$3,239	$26,613	$0	22.36%	34.62%	0.00%	22.36	34.62	0
1979	10,516	26,501	2,449	$456,007	$1,026,629	$127,196	$34,027	$89,513	$14,220	$48,222	$96,216	$36,859	141.72%	107.49%	259.21%	108.07	73.82	210.96
1980	19,927	35,114	3,441	$1,096,193	$1,716,809	$239,165	$92,517	$173,364	$26,957	$53,559	$66,283	$0	57.89%	38.23%	0.00%	74.47	55.66	82.97
1981	11,729	36,348	663	$803,689	$2,339,391	$45,359	$63,619	$202,501	$4,558	$7,265	$7,249	$10,866	11.42%	3.58%	238.39%	54.87	36.21	97.43
1982	16,420	47,544	668	$1,187,410	$3,292,570	$49,090	$82,472	$258,284	$4,005	$74,149	$102,780	$2,220	89.91%	39.79%	55.43%	64.93	37.37	94.25
1983	25,603	42,576	3,229	$1,860,746	$3,042,762	$170,372	$123,878	$208,487	$34,143	$217,829	$367,681	$31,074	175.84%	176.36%	91.01%	98.36	66.09	92.98
1984	27,280	47,658	2,649	$2,102,718	$3,611,367	$173,342	$142,677	$260,120	$19,392	$1,279,847	$2,738,576	$51,438	897.02%	1052.81%	265.25%	304.17	268.32	124.34
1985	35,337	75,630	3,110	$2,415,232	$5,407,325	$203,237	$265,816	$581,554	$43,324	$1,999,938	$4,875,682	$136,520	752.36%	838.39%	315.11%	449.55	447.46	179.5
1986	46,967	83,940	8,518	$2,808,346	$4,606,157	$583,280	$480,341	$674,699	$109,938	$379,234	$437,535	$187,193	78.95%	64.85%	170.27%	312.6	345.24	175.59
1987	36,163	58,213	974	$1,606,664	$1,899,525	$45,464	$322,669	$373,288	$9,744	$80,844	$12,542	$0	25.05%	3.36%	0.00%	255.42	301.21	169.25
1988	35,819	62,341	916	$1,753,317	$2,225,874	$54,565	$333,331	$417,439	$11,084	$362,627	$387,869	$2,328	108.79%	92.92%	21.00%	230.43	274.99	163.39
1989	13,249	28,149	3,536	$802,337	$1,280,771	$160,244	$137,230	$244,075	$30,747	$10,965	$21,827	$54,230	7.99%	8.94%	176.37%	215.84	256.75	164.67
1990	16,098	21,555	470	$670,701	$846,922	$42,488	$113,013	$138,937	$7,531	$2,082	$1,165	$0	1.84%	0.84%	0.00%	204.88	247.14	160.78
1991	20,336	36,625	2,437	$869,031	$1,536,335	$137,896	$134,535	$279,496	$26,016	$293,265	$179,532	$24,920	217.98%	64.23%	95.79%	205.63	234.29	155.88
1992	12,271	16,614	1,200	$598,763	$808,767	$80,909	$113,168	$153,262	$17,760	$207,198	$80,140	$4,142	183.09%	52.29%	23.32%	204.59	227.54	149.36
1993	6,339	16,654	4,767	$283,193	$626,500	$278,746	$62,249	$158,116	$77,572	$5,753	$14,912	$11,694	9.24%	9.43%	15.08%	199.76	219.5	125.72
1994	2,492	10,536	2,912	$147,676	$529,752	$210,185	$35,253	$122,463	$55,660	$0	$35,453	$0	0.00%	28.95%	0.00%	197	214.21	111.61
1995	1,362	3,663	365	$80,058	$237,399	$33,627	$21,165	$63,740	$7,143	$0	$60,704	$0	0.00%	95.24%	0.00%	195.36	212.52	110.03
1996	1,100	4,171	400	$78,112	$263,414	$37,544	$17,698	$64,620	$5,415	$0	$0	$0	0.00%	0.00%	0.00%	194.04	209.49	108.86
1997	895	3,932	555	$45,832	$252,329	$47,092	$8,783	$57,566	$5,818	$1,502	$43,257	$0	17.10%	75.14%	0.00%	193.45	207.81	107.62
1998	190	6,785	5,011	$15,789	$473,449	$448,735	$2,589	$98,378	$82,705	$0	$6,112	$0	0.00%	6.21%	0.00%	193.25	203.59	92.71

RISK AREA 2

Year	Acres			Risk			Premiums			Losses			Loss/Premium Ratio			Cumulative L/P Ratio %		
	Wheat	*Barley*	*Canola*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*
1978	228,414	227,929	49,311	$11,392,897	$10,637,611	$2,352,522	$796,030	$768,011	$259,025	$53,679	$80,732	$63,854	6.74%	10.51%	24.65%	6.74	10.51	24.65
1979	281,234	208,325	61,516	$13,976,060	$9,411,599	$3,377,470	$994,530	$709,163	$323,211	$1,008,704	$649,832	$385,585	101.43%	91.63%	119.30%	59.33	49.46	77.19
1980	247,417	263,830	36,777	$15,546,107	$14,856,054	$2,458,348	$1,082,201	$1,203,421	$224,377	$139,178	$165,320	$28,700	12.86%	13.74%	12.79%	41.83	33.42	59.28
1981	266,761	308,040	19,394	$19,404,045	$21,427,409	$1,396,360	$1,297,543	$1,675,708	$115,575	$74,036	$164,535	$14,317	5.71%	9.82%	12.39%	30.59	24.34	53.4
1982	289,173	271,935	27,601	$22,512,203	$20,619,130	$2,115,092	$1,349,989	$1,451,799	$175,296	$1,212,840	$856,431	$225,697	89.84%	58.99%	128.75%	45.08	33	65.44
1983	335,174	228,027	29,831	$27,654,893	$18,766,469	$2,398,562	$1,546,556	$1,205,050	$172,919	$1,701,002	$1,051,664	$505,874	109.99%	87.27%	292.55%	59.28	42.33	96.35
1984	355,942	279,049	54,841	$29,585,497	$23,335,065	$4,874,842	$1,573,690	$1,382,430	$327,317	$14,781,922	$16,506,626	$2,273,964	939.32%	1194.03%	694.73%	219.56	231.97	218.94
1985	389,718	363,418	48,344	$29,666,687	$27,277,144	$4,200,582	$2,356,241	$2,484,916	$380,884	$14,363,235	$20,456,396	$1,890,084	609.58%	823.22%	496.24%	303.13	367	272.32
1986	474,735	349,541	43,148	$31,462,928	$19,769,451	$3,424,402	$4,254,385	$2,596,698	$420,036	$2,111,599	$1,549,420	$171,468	49.63%	59.67%	40.82%	232.42	307.79	231.78
1987	431,536	311,255	52,359	$20,928,803	$10,880,651	$2,985,917	$3,056,871	$1,824,484	$449,228	$1,137,197	$299,297	$166,536	37.20%	16.40%	37.07%	199.82	273.04	201.07
1988	475,391	316,898	87,476	$24,409,533	$11,387,608	$6,060,464	$3,199,895	$1,777,192	$808,793	$7,222,531	$3,615,284	$1,866,646	225.71%	203.43%	230.79%	203.67	265.8	207.64
1989	512,855	365,422	47,879	$37,909,953	$20,525,947	$3,722,268	$5,137,059	$3,671,773	$507,122	$2,833,433	$1,919,149	$827,238	55.16%	52.27%	163.12%	175.04	228.02	202.22
1990	539,812	340,239	34,426	$40,205,588	$19,188,754	$2,484,632	$4,600,781	$3,075,335	$379,524	$1,349,307	$666,102	$134,976	29.33%	21.66%	35.56%	153.58	201.38	188.3
1991	552,729	345,176	51,094	$27,637,310	$16,638,279	$4,228,750	$3,556,274	$2,638,969	$599,472	$240,842	$387,091	$178,718	6.77%	14.67%	29.81%	138.58	182.76	169.82
1992	657,452	388,187	54,012	$33,742,637	$19,861,913	$4,036,529	$4,339,772	$3,398,208	$601,357	$10,334,567	$3,191,734	$1,061,319	238.14%	93.92%	176.49%	149.62	172.65	170.52
1993	474,770	335,795	107,529	$26,067,732	$17,232,123	$8,964,215	$3,977,384	$3,175,913	$1,432,814	$3,084,263	$1,420,543	$313,471	77.55%	44.73%	21.88%	142.97	160.36	140.85
1994	278,890	286,007	245,416	$14,761,694	$12,100,200	$16,311,963	$2,725,438	$2,634,011	$3,730,370	$127,491	$252,026	$381,058	4.68%	9.57%	10.22%	134.75	149.22	96.17
1995	257,632	259,815	167,956	$14,896,420	$13,276,816	$14,472,995	$2,671,410	$2,726,667	$2,874,622	$109,777	$269,906	$91,716	4.11%	9.90%	3.19%	127.56	139.33	76.78
1996	203,310	191,159	77,899	$14,661,346	$13,373,525	$8,054,030	$2,433,525	$2,679,714	$1,429,046	$85,726	$347,836	$335,317	3.52%	12.98%	23.46%	121.63	131.09	71.77
1997	289,029	286,873	106,745	$22,828,467	$19,252,670	$12,665,653	$3,643,601	$3,618,240	$2,335,939	$112,506	$136,149	$139,278	3.09%	3.76%	5.96%	113.72	120.78	63.01
1998	233,461	324,530	123,680	$16,397,529	$23,027,985	$13,807,601	$2,293,852	$3,726,876	$2,321,632	$53,932	$776,005	$271,740	2.35%	20.82%	11.70%	109.23	113.09	57.01
1999	297,657	276,674	146,912	$24,818,513	$20,151,584	$15,913,162	$3,048,180	$2,880,711	$2,428,083	$211,528	$102,804	$159,255	6.94%	3.57%	6.56%	104.03	106.94	51.52

RISK AREA 3

Year	Acres			Risk			Premiums			Losses			Loss/Premium Ratio			Cumulative L/P Ratio %		
	Wheat	*Barley*	*Canola*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*
1978	420,704	65,420	10,320	$19,933,998	$2,827,756	$501,344	$2,382,595	$311,615	$73,866	$130,059	$106,312	$2,292	5.46%	34.12%	3.10%	5.46	34.12	3.1
1979	436,877	51,503	10,751	$22,356,396	$2,089,402	$576,386	$2,457,518	$236,282	$74,315	$1,695,286	$125,677	$26,944	68.98%	53.19%	36.26%	37.71	42.34	19.73
1980	420,758	73,304	6,473	$25,734,768	$3,737,101	$364,427	$2,853,851	$415,047	$40,456	$189,277	$122,549	$4,158	6.63%	29.53%	10.28%	26.18	36.82	17.7
1981	396,702	68,347	4,473	$27,741,124	$4,368,218	$278,109	$2,750,767	$446,916	$28,088	$114,431	$56,766	$0	4.16%	12.70%	0.00%	20.38	29.17	15.41
1982	379,761	57,588	2,802	$28,816,417	$4,039,955	$206,102	$2,547,986	$386,172	$19,118	$986,180	$140,341	$12,713	38.70%	36.34%	66.50%	23.98	30.71	19.55
1983	407,219	49,516	4,325	$32,813,863	$3,821,185	$341,670	$2,725,314	$388,272	$35,056	$942,443	$159,683	$35,943	34.58%	41.13%	102.53%	25.82	32.57	30.29
1984	373,056	57,986	19,204	$31,120,124	$4,517,299	$1,602,888	$2,172,041	$406,331	$151,303	$11,535,332	$2,892,521	$990,099	531.08%	711.86%	654.38%	87.16	139.11	253.94
1985	413,392	73,638	14,198	$33,220,119	$5,458,745	$1,291,305	$2,927,151	$619,201	$131,139	$13,132,132	$3,358,372	$648,022	448.63%	542.37%	494.15%	137.99	216.9	310.87
1986	424,943	67,985	10,885	$29,368,813	$3,831,134	$822,439	$3,789,698	$586,520	$116,390	$1,960,138	$442,402	$36,305	51.72%	75.43%	31.19%	124.7	195.05	262.27
1987	378,547	62,785	14,695	$19,110,829	$2,232,121	$789,316	$2,736,124	$413,037	$116,761	$393,499	$37,082	$12,364	14.38%	8.98%	10.59%	113.66	176.79	224.9
1988	387,363	68,944	28,168	$20,519,862	$2,304,911	$1,888,574	$2,105,540	$370,495	$267,785	$6,550,105	$970,136	$800,866	311.09%	261.85%	299.07%	127.78	183.67	243.74
1989	420,223	66,306	10,570	$31,644,979	$3,434,578	$809,940	$3,355,145	$593,121	$118,884	$2,406,462	$315,169	$50,428	71.72%	53.14%	42.42%	122.05	168.7	223.34
1990	385,274	47,230	8,195	$28,660,447	$2,515,562	$607,276	$2,605,201	$393,851	$105,141	$2,423,334	$224,005	$89,812	93.02%	56.88%	85.42%	119.91	160.79	212
1991	392,777	42,520	14,535	$18,690,010	$1,866,795	$1,142,131	$2,009,035	$265,452	$185,734	$198,965	$78,534	$33,508	9.90%	29.59%	18.04%	114	154.82	187.39
1992	428,206	43,807	15,899	$22,015,957	$2,208,531	$1,149,130	$2,290,744	$310,370	$207,889	$1,753,287	$209,549	$169,623	76.54%	67.52%	81.59%	111.84	150.43	174.23
1993	329,296	45,556	32,289	$18,014,131	$2,247,456	$2,549,207	$2,010,653	$368,282	$437,146	$324,009	$49,072	$2,228	16.11%	13.32%	0.51%	107.23	141.65	138.23
1994	203,511	34,872	74,512	$10,645,439	$1,325,172	$4,963,075	$1,274,940	$259,131	$893,326	$20,346	$57,002	$117,246	1.60%	22.00%	13.12%	104.1	138.04	101
1995	223,234	45,210	68,888	$13,600,446	$2,222,581	$5,937,846	$1,644,342	$429,665	$975,891	$138,516	$30,096	$61,003	8.42%	7.00%	6.25%	100.57	130.22	77.76
1996	192,664	35,603	31,318	$15,492,275	$2,685,336	$3,414,111	$1,753,645	$515,425	$521,335	$150,368	$68,945	$76,986	8.92%	13.38%	14.77%	97.11	122.41	70.46
1997	211,892	49,044	57,852	$18,053,670	$3,187,297	$6,738,845	$1,956,457	$577,625	$1,007,292	$207,996	$63,725	$659,544	10.63%	11.03%	65.48%	93.61	114.65	69.55
1998	179,840	51,027	55,699	$13,521,639	$3,648,793	$6,598,358	$1,339,292	$550,175	$895,892	$50,241	$38,172	$146,680	3.75%	6.94%	16.37%	91.19	107.95	62.11
1999	259,626	48,528	56,192	$22,375,216	$3,459,875	$6,548,631	$2,042,096	$486,441	$764,979	$94,997	$44,565	$95,107	4.65%	9.16%	12.43%	87.77	102.8	56.81

RISK AREA 4

Year	Acres			Risk			Premiums			Losses			Loss/Premium Ratio			Cumulative L/P Ratio %		
	Wheat	*Barley*	*Canola*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*
1978	257,685	18,845	6,201	$10,062,689	$625,095	$204,328	$1,278,473	$97,675	$32,490	$861,350	$81,122	$39,504	67.37%	83.05%	121.59%	67.37	83.05	121.59
1979	256,412	13,616	5,267	$10,687,036	$441,570	$260,437	$1,440,838	$73,754	$35,607	$324,459	$44,222	$36,417	22.52%	59.96%	102.27%	43.61	72.12	111.49
1980	286,414	15,974	4,171	$15,870,262	$723,731	$255,063	$2,027,245	$102,521	$34,256	$610,001	$33,955	$26,817	30.09%	33.12%	78.28%	37.83	58.15	100.38
1981	285,642	16,972	1,899	$18,427,776	$1,007,635	$131,177	$2,208,326	$139,948	$17,640	$575,039	$66,101	$1,184	26.04%	47.23%	6.71%	34.09	54.46	86.61
1982	226,236	11,899	1,001	$15,971,971	$793,040	$49,596	$1,773,725	$109,795	$7,919	$528,240	$41,039	$26,032	29.78%	37.38%	328.73%	33.21	50.88	101.6
1983	246,290	9,717	1,585	$18,252,426	$656,751	$127,260	$1,948,255	$118,853	$19,817	$556,044	$76,961	$19,375	28.54%	64.75%	97.77%	32.36	53.44	101.08
1984	264,884	16,377	6,975	$20,001,048	$1,084,215	$530,930	$1,724,893	$178,476	$66,513	$7,483,709	$576,856	$296,478	433.87%	323.21%	445.74%	88.2	112.09	208.09
1985	296,693	28,412	5,512	$20,260,048	$1,809,546	$412,288	$1,993,937	$306,936	$60,555	$8,650,432	$961,963	$253,176	433.84%	313.41%	418.09%	136.08	166.87	254.36
1986	328,174	25,855	3,350	$19,624,161	$1,316,112	$266,305	$2,888,347	$271,270	$52,070	$3,162,863	$454,794	$66,146	109.50%	167.65%	127.03%	131.64	167.02	234.08
1987	281,735	26,003	6,428	$13,083,340	$838,505	$392,958	$1,988,692	$173,243	$84,535	$1,457,832	$112,845	$35,254	73.31%	65.14%	41.70%	125.62	155.8	194.55
1988	271,048	21,935	14,604	$12,558,054	$645,304	$919,831	$1,536,137	$122,455	$176,285	$4,842,554	$240,692	$277,258	315.24%	196.56%	157.28%	139.62	158.74	183.37
1989	281,551	26,301	7,620	$18,808,409	$1,302,457	$581,440	$2,419,607	$268,379	$107,659	$7,443,518	$486,542	$203,189	307.63%	181.29%	188.73%	157.12	161.82	184.2
1990	456,591	34,152	6,451	$30,092,492	$1,441,408	$367,022	$3,612,267	$328,642	$75,554	$11,454,805	$396,046	$130,706	317.11%	120.51%	173.00%	178.65	155.9	183.1
1991	499,527	35,641	7,156	$21,173,096	$1,159,438	$402,407	$3,000,279	$197,168	$67,983	$406 653	$47,776	$27,215	13.55%	24.23%	40.03%	162.05	145.47	171.51
1992	526,125	32,653	9,699	$23,173,383	$1,277,296	$521,543	$3,092,703	$241,370	$95,524	$760,391	$52,716	$21,462	24.59%	21.84%	22.47%	149.14	134.54	156.27
1993	436,396	33,678	27,375	$19,224,177	$1,177,517	$1,607,995	$2,947,673	$237,761	$313,660	$643,022	$22,220	$150,979	21.81%	9.35%	48.13%	138.68	124.51	129.09
1994	305,237	37,144	56,380	$13,225,972	$1,133,922	$3,346,857	$2,527,243	$300,431	$765,423	$278,075	$20,322	$177,600	11.00%	6.76%	23.20%	130.28	113.69	88.84
1995	287,849	38,956	50,546	$14,489,083	$1,456,088	$3,804,525	$3,197,013	$435,923	$986,062	$440,722	$316,215	$341,071	13.79%	72.54%	34.59%	121.33	108.85	71.01
1996	212,716	15,984	16,498	$13,563,201	$874,218	$1,545,273	$2,990,023	$245,688	$381,966	$815,326	$67,179	$147,897	27.27%	27.34%	38.72%	115.02	103.78	67.36
1997	215,308	18,400	27,201	$14,752,129	$889,200	$2,832,413	$2,922,267	$230,530	$666,467	$619,991	$107,292	$835,711	21.22%	46.54%	125.39%	109.25	100.62	76.91
1998	199,105	25,480	31,930	$12,434,878	$1,379,533	$3,391,975	$2,272,440	$330,581	$835,016	$554,395	$192,346	$817,276	24.40%	58.18%	97.88%	105.38	97.51	80.5
1999	219,392	21,172	26,280	$15,799,983	$1,178,674	$2,675,980	$2,583,030	$257,415	$646,445	$116,036	$16,493	$135,732	4.49%	6.41%	21.00%	100.4	92.6	73.54

RISK AREA 5

Year	Acres			Risk			Premiums			Losses			Loss/Premium Ratio			Cumulative L/P Ratio %		
	Wheat	*Barley*	*Canola*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*
1978	214,851	279,069	91,884	$11,924,589	$14,201,962	$4,617,515	$740,588	$1,083,566	$466,174	$94,852	$111,343	$36,407	12.81%	10.28%	7.81%	12.81	10.28	7.81
1979	240,418	244,852	126,722	$14,501,808	$12,004,661	$7,478,812	$886,672	$903,929	$691,830	$592,399	$400,804	$369,871	66.81%	44.34%	53.46%	42.23	25.77	35.08
1980	265,773	293,110	73,540	$18,677,254	$17,679,120	$5,668,444	$1,179,802	$1,313,277	$458,440	$333,238	$547,733	$297,019	28.25%	41.71%	64.79%	36.35	32.11	43.51
1981	298,985	363,087	47,176	$24,302,113	$27,385,140	$4,107,840	$1,419,075	$1,890,849	$299,892	$106,556	$253,548	$41,018	7.51%	13.41%	13.68%	26.67	25.3	38.84
1982	317,365	354,751	67,048	$27,705,609	$29,452,064	$6,228,251	$1,417,147	$1,855,067	$421,606	$398,165	$555,443	$119,400	28.10%	29.94%	28.32%	27.03	26.52	36.94
1983	356,593	328,820	86,645	$33,645,701	$29,445,015	$8,301,054	$1,466,141	$1,594,927	$492,374	$565,567	$763,584	$551,848	38.58%	47.88%	112.08%	29.41	30.46	50.01
1984	335,782	330,384	141,971	$32,200,514	$30,351,218	$14,398,797	$1,217,129	$1,400,383	$771,070	$7,763,584	$12,337,910	$5,549,899	637.86%	881.04%	719.77%	118.35	149.08	193.41
1985	366,834	388,582	115,558	$32,195,122	$32,361,530	$11,550,989	$1,534,187	$1,959,453	$822,346	$5,953,658	$11,258,032	$3,439,091	388.07%	574.55%	418.20%	160.31	218.54	235.2
1986	408,103	385,154	101,149	$32,397,008	$25,017,293	$9,066,402	$2,491,288	$2,376,317	$925,117	$777,801	$672,415	$898,303	31.22%	28.30%	97.10%	134.28	187.1	211.31
1987	365,683	392,881	131,643	$23,100,671	$17,087,225	$9,123,825	$1,797,359	$1,786,086	$1,253,266	$915,843	$424,244	$486,775	50.95%	23.75%	38.84%	123.69	169.05	178.57
1988	367,953	359,674	202,919	$25,058,922	$15,801,715	$17,457,023	$1,726,042	$1,565,624	$2,254,111	$2,048,919	$1,446,479	$2,172,850	118.71%	92.39%	96.39%	123.15	162.28	157.66
1989	392,280	391,866	137,550	$38,864,200	$28,303,880	$13,035,506	$2,802,130	$2,968,360	$1,654,452	$2,256,223	$1,941,201	$1,137,413	80.52%	65.40%	68.75%	116.75	148.39	143.66
1990	384,184	384,435	99,035	$37,717,381	$26,349,149	$8,875,164	$2,508,818	$2,634,288	$1,185,365	$1,228,885	$655,342	$567,676	48.98%	24.88%	47.89%	108.73	134.44	133.96
1991	430,401	389,881	133,024	$27,419,115	$21,175,430	$13,286,756	$1,769,634	$2,097,469	$1,450,287	$877,824	$980,167	$1,405,565	49.60%	46.73%	96.92%	104.17	127.21	129.87
1992	462,465	357,538	127,457	$31,202,957	$21,877,484	$12,028,835	$2,004,876	$2,156,232	$1,324,667	$7,037,815	$5,404,105	$5,268,946	351.03%	250.63%	397.76%	124	136.85	154.39
1993	401,593	351,181	183,513	$28,914,522	$22,267,699	$18,857,232	$2,101,948	$2,338,635	$2,284,311	$1,833,339	$1,068,466	$1,203,090	87.22%	45.69%	52.67%	121.14	129.73	140.52
1994	268,102	284,015	258,736	$17,729,132	$14,392,057	$20,152,543	$1,592,109	$1,856,580	$3,034,137	$346,079	$466,776	$771,972	21.74%	25.14%	25.44%	115.62	123.62	122.88
1995	230,512	265,624	210,599	$17,083,422	$16,670,382	$20,369,120	$1,725,535	$2,193,527	$3,049,316	$78,561	$212,343	$297,774	4.55%	9.68%	9.77%	109.31	116.26	107.78
1996	264,279	268,981	121,257	$25,546,671	$25,023,932	$14,409,042	$2,364,674	$3,066,228	$1,933,525	$203,387	$197,747	$273,378	8.60%	6.45%	14.14%	102.04	107.17	100.47
1997	261,317	311,128	176,342	$26,392,260	$25,353,264	$23,492,447	$2,197,577	$2,876,175	$3,115,898	$84,069	$206,689	$714,723	3.83%	7.19%	22.94%	95.86	99.97	91.81
1998	247,785	311,828	187,750	$21,677,929	$26,935,976	$23,848,956	$1,653,851	$2,819,407	$2,849,518	$75,098	$808,409	$396,912	4.54%	28.67%	13.93%	91.73	95.26	84.59
1999	277,942	267,299	207,838	$28,430,500	$23,760,913	$25,127,557	$1,997,001	$2,259,247	$2,811,689	$1,256,019	$347,909	$300,334	62.90%	15.40%	10.68%	90.24	91.25	78.39

RISK AREA 6

Year	Acres			Risk			Premiums			Losses			Loss/Premium Ratio			Cumulative L/P Ratio %		
	Wheat	*Barley*	*Canola*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*
1978	77	12,834	2,405	$2,775	$412,738	$83,461	$275	$39,810	$9,818	$0	$4,969	$0	0.00%	12.48%	0.00%	0	12.48	0
1979	155	12,502	4,423	$6,572	$396,417	$190,745	$537	$34,143	$18,536	$0	$3,635	$1,754	0.00%	10.65%	9.46%	0	11.63	6.19
1980	701	16,095	2,159	$34,890	$695,055	$131,062	$2,467	$56,647	$10,475	$919	$61,084	$11,160	37.25%	107.83%	106.54%	28.03	53.36	33.26
1981	372	17,144	871	$22,193	$968,377	$67,159	$1,687	$67,396	$4,124	$0	$3,393	$0	0.00%	5.03%	0.00%	18.51	36.91	30.07
1982	255	15,479	1,917	$18,582	$917,043	$134,229	$951	$61,845	$8,865	$5,041	$97,573	$58,935	530.07%	157.77%	664.81%	100.73	65.68	138.66
1983	530	16,267	2,221	$45,828	$1,207,768	$172,595	$2,266	$68,804	$9,379	$5,564	$8,295	$23,329	245.54%	12.06%	248.74%	140.83	54.45	155.53
1984	389	16,389	3,007	$35,590	$1,243,600	$271,841	$1,786	$61,237	$12,493	$777	$58,060	$24,657	43.51%	94.81%	197.37%	123.39	60.79	162.62
1985	263	21,428	2,597	$22,559	$1,700,137	$243,676	$1,280	$84,815	$12,956	$4,899	$201,639	$65,008	382.73%	237.74%	501.76%	152.9	92.41	213.33
1986	561	22,547	3,427	$49,432	$1,655,963	$322,290	$4,200	$99,462	$19,824	$11,759	$76,078	$127,525	279.98%	76.49%	643.29%	187.45	89.65	293.39
1987	565	20,868	2,540	$42,317	$1,058,018	$197,210	$3,583	$82,912	$24,345	$1,298	$41,791	$15,082	36.23%	50.40%	61.95%	158.98	84.7	250.32
1988	587	18,929	2,103	$42,858	$941,836	$174,489	$4,825	$63,653	$23,928	$2,073	$20,228	$2,207	42.96%	31.78%	9.22%	135.52	80.02	213.04
1989	193	21,728	1,898	$24,429	$1,744,602	$175,414	$2,662	$111,379	$23,066	$4,721	$103,668	$8,277	177.35%	93.08%	35.88%	139.71	81.77	190.05
1990	495	27,434	2,003	$59,231	$2,015,650	$174,289	$4,846	$160,620	$25,945	$2,160	$127,856	$14,345	44.57%	79.60%	55.29%	125.02	81.42	172.89
1991	1,066	37,297	4,518	$91,622	$2,193,681	$418,599	$6,390	$115,789	$58,184	$1,799	$103,010	$4,646	28.15%	88.96%	7.99%	108.62	82.21	136.26
1992	2,097	32,218	2,441	$168,502	$2,282,616	$211,125	$12,274	$119,607	$33,361	$55,265	$710,169	$133,609	450.26%	593.75%	400.49%	192.44	132.03	166.11
1993	781	30,872	3,056	$68,130	$2,349,168	$290,170	$6,817	$141,878	$45,199	$3,975	$188,020	$35,123	58.31%	132.52%	77.71%	176.35	132.08	154.38
1994	520	20,489	3,826	$42,859	$1,243,860	$300,248	$4,548	$93,132	$54,785	$686	$178,972	$27,814	15.08%	192.17%	50.77%	164.41	135.9	140.02
1995	292	22,171	3,879	$28,228	$1,611,691	$353,955	$2,887	$149,562	$75,993	$0	$50,287	$3,540	0.00%	33.62%	4.66%	157.02	126.42	118.19
1996	114	24,581	1,323	$16,584	$2,581,355	$136,005	$1,267	$252,767	$32,827	$0	$55,414	$8,225	0.00%	21.92%	25.06%	153.99	112.26	112.13
1997	89	23,968	1,788	$11,610	$2,088,982	$183,926	$821	$211,451	$33,825	$0	$67,094	$1,572	0.00%	31.73%	4.65%	152.08	104.06	105.37
1998	281	21,656	3,403	$26,763	$1,959,492	$363,104	$2,895	$187,546	$76,204	$0	$118,895	$2,896	0.00%	63.40%	3.80%	145.73	100.69	92.77
1999	780	19,464	2,456	$106,281	$1,792,973	$274,429	$7,571	$156,992	$49,699	$6,097	$166,146	$1,530	80.53%	105.83%	3.08%	139.3	101.03	86.05

RISK AREA 7

Year	Acres			Risk			Premiums			Losses			Loss/Premium Ratio			Cumulative L/P Ratio %		
	Wheat	Barley	Canola	W	B	C	W	B	C	W	B	C	W	B	C	W	B	C
1978	26,808	311,435	149,222	$1,475,111	$19,004,173	$6,407,919	$79,092	$1,246,262	$634,304	$2,257	$54,114	$27,945	2.85%	4.34%	4.41%	2.85	4.34	4.41
1979	41,180	385,506	188,697	$2,358,887	$17,507,106	$10,210,908	$123,807	$1,034,940	$873,440	$18,563	$270,039	$320,602	14.99%	26.09%	36.71%	10.26	14.21	23.12
1980	59,331	472,941	113,200	$4,099,660	$28,082,312	$8,369,181	$222,873	$1,689,574	$618,243	$92,102	$976,028	$800,854	41.32%	57.77%	129.54%	26.52	32.74	54.06
1981	69,018	559,506	75,855	$5,625,064	$41,988,168	$6,424,883	$289,162	$2,290,176	$392,197	$27,434	$62,021	$30,562	9.49%	2.71%	7.79%	19.63	21.76	46.86
1982	74,699	538,194	137,129	$6,711,723	$44,576,245	$12,776,430	$310,210	$2,310,021	$691,929	$87,067	$1,584,231	$934,395	28.07%	68.58%	135.04%	22.18	34.38	65.87
1983	106,486	497,045	174,642	$10,135,654	$45,148,071	$17,179,691	$427,402	$2,088,541	$817,693	$67,709	$524,282	$927,898	15.84%	25.10%	113.48%	20.32	32.56	75.53
1984	94,115	502,483	209,764	$9,392,336	$47,236,417	$22,182,555	$331,084	$1,840,968	$986,194	$1,464,511	$3,304,869	$2,804,117	442.34%	179.52%	284.34%	98.66	54.2	116.6
1985	90,638	564,340	205,434	$8,651,818	$54,195,851	$22,594,941	$356,597	$2,218,250	$1,130,717	$1,997,052	$10,384,051	$5,220,218	560.03%	468.12%	461.67%	175.53	116.58	180.1
1986	109,157	556,383	222,858	$9,872,772	$45,622,112	$23,109,152	$605,820	$2,687,510	$1,533,564	$341,296	$1,295,627	$6,971,000	56.34%	48.21%	454.56%	149.23	106.03	234.92
1987	80,070	535,444	176,613	$6,244,558	$30,252,022	$14,509,237	$483,083	$2,204,743	$1,551,601	$220,361	$255,280	$842,565	45.62%	11.58%	54.30%	133.73	95.41	204.55
1988	107,536	513,279	182,745	$8,826,553	$28,733,474	$17,158,899	$664,302	$1,780,407	$1,889,561	$426,113	$233,817	$543,136	64.14%	13.13%	28.74%	121.86	88.56	174.68
1989	96,813	579,065	145,001	$11,602,686	$52,502,226	$14,888,050	$848,046	$3,191,575	$1,750,597	$220,071	$1,153,765	$627,604	25.95%	36.15%	35.85%	104.7	81.76	155.8
1990	82,346	420,830	116,319	$10,602,836	$37,047,359	$11,319,772	$705,737	$2,023,052	$1,276,427	$234,117	$2,442,923	$630,115	33.17%	120.75%	49.37%	95.44	84.72	146.19
1991	123,557	437,412	138,787	$10,612,871	$30,456,836	$14,841,177	$518,435	$1,127,164	$1,260,409	$330,150	$1,111,234	$831,971	63.68%	98.59%	66.01%	92.68	85.29	139.63
1992	152,743	411,477	123,336	$14,169,304	$33,089,808	$12,451,103	$700,567	$1,220,268	$1,061,135	$2,679,537	$3,636,133	$5,972,573	382.48%	297.98%	562.85%	123.13	94.25	166.9
1993	112,361	424,488	131,591	$11,486,899	$35,869,828	$14,180,194	$673,919	$1,630,111	$1,450,288	$1,397,572	$450,5[illegible]	$1,143,151	207.38%	27.64%	78.82%	130.87	90.7	159.77
1994	70,201	346,552	173,054	$6,405,808	$23,289,216	$15,421,184	$462,963	$1,328,913	$1,968,424	$211,030	$723,1[illegible]	$545,702	45.58%	54.48%	27.72%	125.81	89.19	146.7
1995	57,576	346,076	139,164	$5,564,075	$28,568,335	$14,486,790	$416,945	$1,733,877	$1,934,626	$15,288	$242,642	$390,049	3.67%	13.99%	20.16%	119.61	85.32	135.48
1996	47,569	412,402	75,207	$6,348,280	$50,280,847	$9,366,300	$427,597	$2,835,345	$1,170,651	$122,839	$482,812	$94,775	28.73%	17.03%	8.10%	115.12	80.01	129
1997	34,667	382,457	120,015	$4,605,875	$39,906,327	$16,041,676	$282,628	$2,196,727	$1,870,122	$30,974	$351,856	$124,555	10.96%	16.02%	6.66%	111.82	76.37	119.8
1998	40,701	340,206	142,018	$4,869,488	$38,146,391	$19,435,299	$301,253	$1,949,764	$2,140,148	$27,959	$357,847	$81,923	9.28%	18.35%	3.83%	108.48	73.59	110.6
1999	45,112	303,052	140,540	$6,326,432	$34,308,028	$19,357,221	$345,345	$1,614,920	$1,894,603	$372,277	$529,805	$387,877	107.80%	32.81%	20.47%	108.45	72.03	104.7

RISK AREA 8

Year	Acres			Risk			Premiums			Losses			Loss/Premium Ratio			Cumulative L/P Ratio %		
	Wheat	*Barley*	*Canola*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*
1978	255,129	120,535	76,461	$13,545,839	$5,848,536	$3,425,489	$857,536	$425,871	$344,718	$275,576	$155,054	$142,232	32.14%	36.41%	41.26%	32.14	36.41	41.26
1979	281,050	98,951	86,268	$16,210,556	$4,725,198	$4,681,898	$1,023,315	$332,212	$412,973	$327,580	$84,217	$168,910	32.01%	25.35%	40.90%	32.07	31.56	41.06
1980	301,044	128,858	68,333	$19,937,757	$7,296,871	$4,667,436	$1,301,206	$523,869	$369,426	$884,006	$264,164	$198,066	67.94%	50.43%	53.61%	46.74	39.27	45.18
1981	361,579	159,568	53,087	$28,345,087	$11,495,674	$4,115,902	$1,717,816	$777,327	$285,557	$570,090	$228,563	$24,924	33.19%	29.40%	8.73%	41.99	35.55	37.81
1982	379,979	143,468	68,026	$32,244,514	$11,286,268	$5,414,297	$1,771,519	$720,456	$352,330	$275,251	$158,731	$70,131	15.54%	22.03%	19.90%	34.96	32.04	34.24
1983	419,584	139,361	100,763	$38,352,925	$11,807,130	$8,721,303	$1,837,108	$691,305	$522,454	$966,871	$247,373	$1,030,810	52.63%	35.78%	197.30%	38.78	32.79	71.48
1984	419,942	171,655	143,453	$37,911,941	$14,812,004	$13,288,409	$1,606,456	$804,756	$685,237	$5,723,245	$4,015,827	$3,482,090	356.27%	499.01%	508.16%	89.2	120.54	172.14
1985	433,330	205,847	128,457	$38,310,954	$17,065,849	$12,167,721	$1,756,983	$1,079,553	$805,581	$8,987,159	$6,731,428	$4,947,942	511.51%	623.54%	614.21%	151.7	221.93	266.39
1986	461,008	200,846	120,726	$37,346,432	$13,536,831	$10,134,399	$2,620,520	$1,293,076	$1,001,391	$1,870,707	$118,277	$1,153,300	71.39%	9.15%	115.17%	137.18	180.55	234.71
1987	423,697	202,124	137,113	$27,077,924	$8,938,085	$8,961,565	$2,020,301	$887,087	$1,156,693	$1,879,016	$297,667	$1,001,707	93.01%	33.56%	86.60%	131.77	163.24	205.85
1988	414,234	189,471	184,176	$27,546,347	$8,467,652	$14,792,194	$1,829,139	$704,130	$1,960,558	$931,508	$300,631	$816,294	50.93%	42.70%	41.64%	123.71	152.54	165.08
1989	455,945	201,614	142,660	$43,564,792	$14,343,110	$12,709,065	$2,757,527	$1,224,254	$1,610,084	$1,253,419	$673,489	$858,523	45.45%	55.01%	53.32%	113.48	140.27	146.15
1990	402,223	252,677	129,034	$37,064,720	$18,310,496	$11,037,432	$2,675,473	$1,530,301	$1,577,896	$332,917	$342,581	$402,009	12.44%	22.39%	25.48%	102.11	123.87	128.98
1991	414,070	251,529	146,809	$26,481,065	$15,052,195	$14,153,333	$1,585,856	$1,225,384	$1,666,449	$371,626	$660,674	$658,342	23.43%	53.92%	39.51%	97.19	116.85	117.28
1992	429,104	222,802	149,120	$31,100,440	$15,379,734	$13,940,824	$1,848,916	$1,233,220	$1,602,018	$4,507,713	$970,745	$3,256,389	243.80%	78.72%	203.27%	107.16	113.35	126.88
1993	381,921	231,162	179,028	$30,390,936	$16,540,315	$18,486,755	$2,044,608	$1,372,102	$1,992,108	$3,484,739	$431,894	$1,590,770	170.44%	31.48%	79.85%	111.58	105.78	121.15
1994	271,327	198,145	229,953	$19,340,716	$11,622,113	$19,673,657	$1,607,143	$1,104,369	$2,592,460	$477,743	$410,183	$724,104	29.73%	37.14%	27.93%	107.32	101.02	108.39
1995	248,052	200,935	215,567	$18,596,535	$14,076,031	$21,901,926	$1,557,599	$1,263,193	$2,605,820	$27,113	$104,516	$381,970	1.74%	8.27%	14.66%	102.24	94.2	97.05
1996	261,087	216,091	137,314	$27,238,488	$23,106,150	$17,514,119	$2,175,153	$1,871,759	$1,914,839	$235,219	$205,260	$161,952	10.81%	10.97%	8.46%	96.49	86.03	89.82
1997	249,035	216,305	202,595	$26,375,935	$19,687,518	$26,845,005	$1,895,833	$1,493,207	$2,759,842	$349,406	$518,590	$1,083,999	18.43%	34.73%	39.28%	92.44	82.31	84.5
1998	236,229	227,036	213,930	$22,725,736	$22,368,110	$28,053,174	$1,608,808	$1,695,473	$2,713,174	$367,223	$476,833	$874,509	22.83%	28.12%	32.23%	89.5	78.18	79.6
1999	257,666	205,218	217,013	$28,277,684	$20,092,505	$27,270,186	$1,788,476	$1,334,572	$2,416,315	$683,663	$170,221	$271,057	38.23%	12.75%	11.22%	87.2	74.48	74.33

RISK AREA 9

Year	Acres			Risk			Premiums			Losses			Loss/Premium Ratio			Cumulative L/P Ratio %		
	Wheat	*Barley*	*Canola*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*
1978	322,500	37,011	37,353	$13,149,697	$1,514,605	$1,397,786	$1,216,880	$159,852	$184,469	$1,355,809	$316,781	$263,724	111.42%	198.17%	142.96%	111.42	198.17	142.96
1979	314,696	28,955	34,977	$13,819,564	$1,212,284	$1,697,332	$1,336,725	$132,645	$206,308	$192,344	$37,057	$46,847	14.39%	27.94%	22.71%	60.63	120.97	79.48
1980	360,353	36,229	20,350	$20,412,494	$1,795,247	$1,216,641	$1,892,807	$190,341	$128,303	$670,201	$78,472	$58,476	35.41%	41.23%	45.58%	49.69	89.54	71.1
1981	395,512	38,730	18,081	$26,500,312	$2,500,106	$1,248,422	$2,354,599	$248,347	$117,941	$1,439,936	$168,649	$78,370	61.15%	67.91%	66.45%	53.79	82.19	70.24
1982	457,795	35,487	20,715	$33,425,736	$2,436,835	$1,561,465	$2,737,770	$248,977	$138,620	$450,075	$77,924	$23,162	16.44%	31.30%	16.71%	43.07	69.26	60.67
1983	525,676	28,204	43,403	$39,874,920	$2,022,148	$3,276,480	$2,930,902	$232,451	$274,044	$732,601	$143,131	$428,090	25.00%	61.57%	156.21%	38.82	67.79	85.61
1984	547,532	39,154	73,494	$41,290,468	$2,857,280	$5,861,060	$2,513,471	$278,000	$430,505	$8,600,787	$718,165	$1,212,725	342.19%	258.33%	281.70%	89.71	103.33	142.64
1985	595,871	53,092	94,999	$40,901,035	$3,739,580	$7,884,066	$2,789,875	$386,189	$649,725	$9,181,274	$829,020	$1,671,434	329.09%	214.67%	257.25%	127.29	126.24	177.6
1986	622,072	68,676	100,509	$40,271,953	$4,162,918	$8,120,219	$3,976,410	$525,570	$896,609	$4,129,321	$198,155	$1,230,214	103.85%	37.70%	137.21%	123	106.87	165.64
1987	583,264	80,309	107,811	$29,389,787	$3,108,529	$6,716,645	$3,211,451	$446,064	$949,777	$6,992,408	$335,381	$602,081	217.73%	75.19%	63.39%	135.19	101.91	141.21
1988	537,822	82,224	161,691	$26,555,791	$2,906,714	$11,981,270	$2,733,816	$359,239	$1,857,040	$15,664,796	$1,202,908	$3,769,002	573.00%	334.85%	202.96%	178.41	127.99	160.87
1989	593,367	104,283	116,510	$41,928,549	$5,744,479	$9,831,699	$4,723,515	$835,410	$1,627,041	$18,727,131	$3,295,541	$4,062,322	396.47%	394.48%	249.68%	210.18	183.06	180.24
1990	588,563	125,421	89,766	$40,630,952	$6,648,490	$7,333,477	$4,584,158	$950,547	$1,255,370	$12,153,003	$1,236,808	$1,991,055	265.11%	130.12%	158.60%	216.99	172.98	177.12
1991	605,432	157,556	138,851	$26,983,515	$6,596,931	$12,040,194	$3,301,230	$1,004,452	$1,909,432	$336,703	$614,836	$1,283,606	10.20%	61.21%	67.22%	200.05	154.26	157.37
1992	614,708	124,280	132,345	$28,811,674	$5,631,331	$10,433,336	$3,820,918	$931,849	$1,758,051	$2,187,881	$522,239	$2,323,398	57.26%	56.04%	132.16%	187.68	141.06	153.79
1993	512,604	131,208	193,819	$26,250,331	$6,469,772	$17,761,092	$3,871,571	$1,028,443	$2,704,424	$1,676,962	$293,103	$1,983,298	43.31%	28.50%	73.34%	176.04	126.51	139.37
1994	348,533	107,494	251,313	$16,567,606	$4,291,556	$18,984,989	$2,981,181	$798,848	$3,489,527	$582,189	$246,360	$1,258,373	19.53%	30.84%	36.06%	166.88	117.78	119.97
1995	345,310	110,885	226,530	$17,980,767	$5,355,109	$20,144,261	$3,232,404	$974,544	$3,836,508	$409,258	$568,219	$1,941,760	12.66%	58.31%	50.61%	157.69	111.83	108.09
1996	289,593	71,105	96,241	$19,438,753	$5,028,613	$10,614,154	$3,493,383	$912,332	$1,974,760	$741,101	$534,829	$1,108,030	21.21%	58.62%	56.11%	149.43	107.27	103.89
1997	285,524	80,212	143,792	$19,035,803	$4,546,738	$16,293,360	$3,030,154	$773,632	$2,801,650	$759,489	$720,359	$2,233,319	25.06%	93.11%	79.71%	143.22	106.31	101.39
1998	237,976	95,005	174,357	$13,909,113	$5,573,319	$18,450,579	$2,044,959	$911,676	$3,272,249	$1,989,725	$1,450,710	$3,596,183	97.30%	159.13%	109.90%	141.73	110.21	102.31
1999	263,146	95,073	146,144	$18,302,330	$5,753,144	$14,974,309	$2,513,936	$918,455	$2,577,619	$129,418	$43,917	$225,419	5.15%	4.78%	8.75%	136.47	102.9	95.01

RISK AREA 10

Year	Acres			Risk			Premiums			Losses			Loss/Premium Ratio			Cumulative L/P Ratio %		
	Wheat	*Barley*	*Canola*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*
1978	7,624	37,775	12,296	$313,420	$1,223,202	$425,946	$41,453	$149,513	$77,834	$22,343	$63,807	$32,622	53.90%	42.68%	41.91%	53.9	42.68	41.91
1979	3,608	34,454	14,941	$173,451	$1,215,199	$626,955	$20,325	$135,497	$93,554	$10,360	$115,193	$106,159	50.97%	85.02%	113.47%	52.94	62.8	80.97
1980	10,083	39,657	6,574	$571,782	$1,747,417	$344,499	$65,555	$192,700	$46,767	$32,491	$117,572	$51,515	49.56%	61.01%	110.15%	51.2	62.08	87.23
1981	11,296	44,487	2,858	$746,651	$2,605,936	$184,409	$82,698	$269,528	$22,116	$6,931	$4,261	$0	8.38%	1.58%	0.00%	34.34	40.26	79.2
1982	12,277	47,496	3,364	$892,166	$3,012,220	$236,001	$96,127	$300,755	$24,492	$32,394	$80,488	$33,083	33.70%	26.76%	135.08%	34.14	36.39	84.37
1983	10,752	41,353	6,106	$870,841	$2,918,312	$487,014	$93,329	$306,863	$54,340	$50,297	$310,583	$162,602	53.89%	101.21%	299.23%	38.75	51.07	120.96
1984	10,176	53,871	5,843	$839,464	$3,859,921	$444,682	$86,079	$417,896	$53,951	$33,564	$240,246	$4,174	38.99%	57.49%	7.74%	38.8	52.58	104.58
1985	9,153	62,717	9,354	$826,272	$4,733,284	$734,630	$76,017	$498,642	$95,695	$14,140	$114,186	$40,076	18.60%	22.90%	41.88%	36.06	46.07	91.78
1986	8,827	58,767	11,165	$813,834	$4,156,803	$938,851	$65,404	$390,751	$123,808	$66,523	$110,524	$94,685	101.71%	28.29%	76.48%	42.91	43.46	88.58
1987	5,549	61,974	8,273	$438,213	$2,985,939	$576,046	$38,107	$290,259	$86,560	$12,858	$46,301	$34,836	33.74%	15.95%	40.24%	42.39	40.75	82.42
1988	10,512	62,970	12,783	$741,944	$2,932,295	$1,032,446	$62,765	$235,968	$139,238	$19,903	$12,081	$24,018	31.71%	5.12%	17.25%	41.46	38.11	71.33
1989	13,313	65,656	10,220	$1,411,644	$5,027,379	$912,841	$109,722	$341,996	$121,938	$174,492	$916,713	$126,021	159.03%	268.05%	103.35%	56.87	60.39	75.49
1990	8,058	44,881	7,578	$762,805	$3,270,814	$591,507	$63,724	$303,815	$83,257	$50,473	$235,663	$16,638	79.21%	77.57%	19.98%	58.45	61.75	70.97
1991	10,741	53,586	11,904	$731,330	$3,136,056	$1,019,471	$58,848	$303,581	$143,489	$19,952	$215,306	$24,650	33.90%	70.92%	17.18%	56.94	62.42	64.36
1992	12,069	34,178	8,402	$958,865	$2,314,973	$756,783	$79,345	$221,766	$109,127	$185,409	$309,686	$87,120	233.67%	139.65%	79.83%	70.43	66.35	65.68
1993	9,043	33,246	8,220	$852,608	$2,452,888	$845,526	$62,779	$198,039	$100,507	$135,195	$129,002	$78,263	215.35%	65.14%	77.87%	78.68	66.3	66.57
1994	4,321	21,369	12,824	$333,290	$1,302,123	$1,195,333	$29,676	$127,227	$152,332	$30,353	$100,101	$143,282	102.28%	78.68%	94.06%	79.3	66.63	69.31
1995	3,355	25,020	9,809	$300,268	$2,043,714	$1,170,743	$30,211	$222,738	$160,965	$11,350	$29,929	$47,519	37.57%	13.44%	29.52%	78.22	64.22	65.52
1996	3,960	33,337	6,543	$496,163	$3,761,375	$907,565	$49,208	$399,678	$125,536	$65,077	$528,118	$63,902	132.25%	132.14%	50.90%	80.41	69.34	64.51
1997	6,084	34,775	13,671	$695,639	$3,308,972	$1,941,155	$66,373	$324,927	$239,387	$78,567	$525,422	$37,480	118.37%	161.70%	15.66%	82.39	74.66	58.82
1998	5,386	33,748	22,829	$521,061	$3,230,764	$3,346,972	$49,364	$315,440	$431,597	$28,119	$141,083	$76,232	56.96%	44.73%	17.66%	81.44	73.08	51.67
1999	5,983	31,929	23,996	$744,224	$3,051,912	$3,412,804	$69,612	$306,327	$417,831	$9,163	$98,404	$73,456	13.16%	32.12%	17.58%	78.04	71.07	46.77

RISK AREA 11

Year	Acres			Risk			Premiums			Losses			Loss/Premium Ratio			Cumulative L/P Ratio %		
	Wheat	*Barley*	*Canola*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*
1978	19,824	176,091	57,899	$964,916	$7,084,150	$2,318,205	$83,274	$648,603	$304,363	$70,567	$364,912	$40,460	84.74%	56.26%	13.29%	84.74	56.26	13.29
1979	18,350	160,384	79,391	$985,166	$6,393,642	$4,041,576	$72,974	$531,497	$457,154	$6,820	$62,527	$192,669	9.35%	11.76%	42.15%	49.53	36.22	30.61
1980	42,095	202,380	40,800	$2,755,726	$10,777,933	$2,840,975	$216,195	$904,720	$288,340	$90,516	$813,586	$333,150	41.87%	89.93%	115.54%	45.08	59.53	53.94
1981	38,310	233,256	16,101	$3,036,290	$16,091,590	$1,277,402	$227,345	$1,225,420	$108,310	$84,960	$207,217	$28,114	37.37%	16.91%	25.96%	42.16	43.75	51.32
1982	35,223	233,405	37,058	$3,064,266	$17,613,869	$3,122,566	$211,052	$1,265,918	$231,717	$181,175	$1,652,611	$459,982	85.84%	130.55%	198.51%	53.53	67.76	75.86
1983	46,096	210,315	46,224	$4,305,864	$17,070,601	$4,104,654	$265,425	$1,155,004	$282,034	$547,721	$4,565,395	$1,084,890	206.36%	395.27%	384.67%	91.22	133.76	127.95
1984	52,430	231,840	71,787	$4,787,214	$18,485,081	$6,405,845	$307,700	$1,323,576	$509,716	$177,038	$801,019	$444,381	57.54%	60.52%	87.18%	83.73	120.02	118.43
1985	46,959	276,798	68,971	$4,387,467	$23,043,138	$6,597,139	$269,689	$1,664,194	$507,024	$227,032	$885,569	$458,639	84.18%	53.21%	90.46%	83.8	107.27	113.15
1986	56,106	266,842	84,434	$5,421,253	$20,389,882	$8,103,428	$325,339	$1,476,604	$676,580	$461,790	$535,775	$1,134,895	141.94%	36.28%	167.74%	93.36	96.99	124.13
1987	41,019	254,364	65,432	$3,433,861	$13,573,420	$5,095,821	$240,971	$1,105,430	$564,651	$377,171	$707,703	$393,744	156.52%	64.02%	69.73%	100.22	93.76	116.31
1988	66,485	258,586	102,619	$5,484,837	$13,428,252	$9,056,088	$357,311	$943,744	$1,052,398	$100,840	$77,170	$288,883	28.22%	8.18%	27.45%	90.24	87.17	97.54
1989	78,958	281,292	70,552	$9,335,342	$23,268,879	$7,021,655	$597,230	$1,491,684	$777,165	$488,146	$1,536,528	$400,994	81.74%	103.01%	51.60%	88.64	88.89	91.34
1990	89,253	301,283	88,196	$9,751,580	$22,609,857	$8,234,858	$814,756	$1,675,688	$884,821	$189,203	$955,384	$473,339	23.22%	57.01%	53.50%	75.28	85.42	86.3
1991	75,796	246,931	89,655	$5,717,548	$15,225,174	$9,444,374	$408,689	$944,636	$938,959	$322,397	$1,040,320	$305,803	78.89%	110.13%	32.57%	75.61	86.85	79.65
1992	83,938	205,583	81,538	$6,991,905	$14,554,902	$8,592,129	$499,549	$917,787	$865,089	$1,129,097	$1,168,977	$1,357,936	226.02%	127.37%	156.97%	90.95	89	87.57
1993	69,825	205,961	111,404	$6,676,390	$15,899,079	$13,304,078	$441,469	$1,117,874	$1,190,734	$381,169	$275,454	$390,973	86.34%	24.64%	32.83%	90.57	85.09	80.81
1994	35,098	132,887	118,752	$2,862,438	$8,164,111	$12,003,763	$229,934	$687,123	$1,285,043	$106,511	$259,537	$494,101	46.32%	37.77%	38.45%	88.75	83.39	75.82
1995	55,177	154,191	112,638	$5,359,991	$12,772,579	$14,659,781	$438,067	$1,074,576	$1,531,176	$76,515	$120,880	$834,665	17.47%	11.25%	54.51%	83.55	79.54	73.2
1996	57,320	191,967	80,251	$7,559,431	$22,466,228	$11,951,430	$560,883	$1,687,041	$1,096,829	$293,770	$1,236,331	$348,514	52.38%	73.28%	31.77%	80.89	79.06	69.85
1997	44,621	191,917	131,014	$5,926,162	$19,574,975	$20,691,257	$407,661	$1,370,718	$1,903,376	$223,435	$1,167,892	$447,703	54.81%	85.20%	23.52%	79.36	79.42	64.14
1998	42,019	176,160	173,821	$4,883,042	$18,267,809	$26,869,343	$330,599	$1,239,577	$2,332,838	$180,332	$370,129	$175,010	54.55%	29.86%	7.50%	78.24	76.91	56.72
1999	53,986	161,616	172,816	$7,348,706	$17,103,799	$26,729,389	$466,426	$1,119,427	$2,191,211	$239,275	$452,942	$263,400	51.30%	40.46%	12.02%	76.62	75.31	51.81

RISK AREA 12

Year	Acres			Risk			Premiums			Losses			Loss/Premium Ratio			Cumulative L/P Ratio %		
	Wheat	*Barley*	*Canola*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*
1978	121,304	92,061	113,776	$5,236,300	$3,381,959	$4,443,031	$403,957	$324,505	$500,226	$451,000	$452,007	$268,392	111.65%	139.29%	53.65%	111.65	139.29	53.65
1979	117,837	70,253	127,989	$5,321,189	$2,500,553	$6,400,600	$353,631	$228,260	$648,331	$88,741	$40,730	$176,728	25.09%	17.84%	27.26%	71.24	89.14	38.75
1980	172,982	108,037	99,823	$10,018,312	$4,721,117	$5,999,359	$693,130	$418,531	$569,019	$10,272	$52,294	$106,406	1.48%	12.49%	18.70%	37.91	56.11	32.11
1981	216,505	154,759	75,746	$14,986,449	$8,744,370	$5,026,541	$966,120	$738,849	$404,477	$537,167	$174,325	$120,310	55.60%	23.59%	29.74%	44.98	42.06	31.66
1982	189,046	131,041	109,096	$14,182,431	$7,954,114	$7,417,527	$845,253	$626,047	$562,448	$483,816	$276,324	$343,352	57.24%	44.14%	61.05%	48.16	42.62	37.82
1983	248,188	115,500	164,159	$19,532,899	$8,483,726	$13,015,967	$1,038,192	$630,236	$841,280	$997,760	$1,849,080	$2,617,541	96.11%	293.39%	311.14%	59.73	95.9	103.03
1984	267,217	153,441	215,476	$20,111,639	$10,974,781	$17,116,555	$975,807	$916,668	$1,078,042	$298,903	$330,840	$612,288	30.63%	36.09%	56.80%	54.35	81.78	92.21
1985	325,389	194,965	228,083	$23,728,694	$14,127,877	$19,551,425	$1,194,604	$1,177,046	$1,290,708	$1,177,119	$1,050,133	$1,410,212	98.54%	89.22%	109.26%	62.51	83.51	95.94
1986	357,836	188,644	250,593	$25,315,633	$12,551,662	$21,825,914	$1,372,903	$1,080,253	$1,610,494	$291,093	$106,465	$1,455,913	21.20%	9.86%	90.40%	55.28	70.55	94.75
1987	321,143	229,737	250,077	$20,868,806	$10,229,028	$17,741,164	$1,122,141	$927,929	$1,876,942	$2,696,407	$341,030	$847,377	240.29%	36.75%	45.15%	78.44	66.12	84.83
1988	357,152	204,486	340,567	$23,850,599	$8,878,040	$27,967,124	$1,235,067	$701,514	$2,764,642	$1,226,376	$242,323	$1,339,540	99.30%	34.54%	48.45%	80.96	63.26	76.55
1989	424,321	238,793	256,175	$40,513,621	$16,299,723	$23,704,456	$2,500,901	$1,285,399	$2,377,365	$2,384,951	$1,182,523	$1,746,049	95.36%	92.00%	73.44%	83.8	67.34	76.04
1990	440,094	243,991	230,752	$41,990,082	$15,753,365	$19,873,848	$2,820,051	$1,290,939	$2,365,687	$420,776	$357,974	$842,839	14.92%	27.73%	35.63%	71.28	62.4	70.38
1991	524,037	281,176	293,476	$33,483,195	$14,938,474	$28,292,122	$2,171,488	$1,098,231	$2,469,466	$436,681	$421,536	$643,867	20.11%	38.38%	26.07%	65	60.1	64.73
1992	553,390	224,672	270,522	$37,590,742	$14,694,591	$25,941,204	$2,757,188	$1,062,209	$2,426,210	$5,297,444	$1,831,580	$5,156,205	192.13%	172.43%	212.52%	82.14	69.64	81.19
1993	507,292	226,400	316,009	$38,980,027	$15,783,127	$33,076,134	$3,167,194	$1,371,572	$3,307,103	$1,247,058	$345,783	$1,025,340	39.37%	25.21%	31.00%	76.41	65.25	74.57
1994	376,908	197,414	372,956	$25,324,065	$10,687,381	$31,656,062	$1,868,151	$907,961	$3,076,672	$489,536	$312,941	$1,023,823	26.20%	34.47%	33.28%	72.73	63.36	70.06
1995	354,354	199,951	307,462	$27,898,847	$14,549,372	$32,896,039	$1,876,232	$1,193,132	$2,943,333	$725,290	$665,815	$1,515,664	38.66%	55.80%	51.49%	70.39	62.79	68.31
1996	373,209	208,811	226,362	$39,003,140	$22,625,830	$29,145,524	$2,520,630	$1,683,739	$2,390,292	$222,558	$384,507	$574,259	8.83%	22.84%	24.02%	65.2	58.98	65.15
1997	337,781	207,824	309,139	$34,208,958	$18,006,173	$41,696,163	$2,038,742	$1,239,168	$3,351,809	$335,066	$674,314	$1,008,167	16.43%	54.42%	30.08%	62.08	58.68	61.96
1998	304,917	195,324	345,246	$27,007,154	$18,099,391	$45,218,656	$1,464,536	$1,173,822	$3,373,542	$1,839,218	$1,887,930	$2,678,911	125.58%	160.84%	79.41%	64.87	64.66	63.42
1999	340,813	178,180	341,395	$35,323,382	$16,590,898	$44,787,155	$1,796,850	$1,042,009	$3,104,145	$601,036	$136,461	$349,464	33.45%	13.10%	11.26%	63.26	62.11	59.68

RISK AREA 13

Year	Acres			Risk			Premiums			Losses			Loss/Premium Ratio			Cumulative L/P Ratio %		
	Wheat	*Barley*	*Canola*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*
1978	162,669	131,277	190,931	$7,457,869	$4,936,954	$7,954,118	$655,780	$528,471	$981,544	$1,046,417	$877,546	$536,018	159.57%	166.05%	54.61%	159.57	166.05	54.61
1979	158,145	109,251	232,590	$7,516,025	$3,903,698	$12,082,994	$564,032	$401,818	$1,338,373	$173,053	$157,481	$1,013,981	30.68%	39.19%	75.76%	99.97	111.26	66.81
1980	253,380	169,785	153,695	$15,104,653	$7,485,368	$9,850,502	$1,172,031	$737,534	$1,016,265	$345,490	$276,190	$298,972	29.48%	37.45%	29.42%	65.43	78.62	55.42
1981	271,652	208,018	120,471	$19,072,565	$11,635,269	$8,487,525	$1,365,417	$1,081,278	$725,962	$1,659,085	$614,388	$455,279	121.51%	56.82%	62.71%	85.81	70.04	56.72
1982	248,998	216,717	162,699	$19,241,153	$13,453,627	$12,398,650	$1,310,772	$1,206,559	$1,009,962	$703,160	$334,581	$797,001	53.64%	27.73%	78.91%	77.49	57.14	61.14
1983	311,903	179,785	229,942	$24,741,180	$12,818,620	$19,039,081	$1,491,702	$1,064,872	$1,311,994	$3,126,550	$2,711,880	$4,446,246	209.60%	254.67%	338.89%	107.53	99.03	118.22
1984	315,713	221,257	292,833	$23,985,083	$15,589,479	$24,640,019	$1,314,945	$1,408,866	$1,616,360	$1,047,390	$1,302,844	$1,384,629	79.65%	92.47%	85.66%	102.88	97.6	111.65
1985	357,115	272,891	319,169	$26,770,184	$19,804,270	$29,522,266	$1,448,789	$1,758,450	$2,028,129	$2,391,928	$3,317,333	$3,527,805	165.10%	188.65%	173.94%	112.54	117.15	124.24
1986	377,627	252,417	327,562	$27,035,815	$16,574,863	$29,864,630	$1,576,698	$1,533,805	$2,336,022	$1,334,697	$352,575	$3,170,211	84.65%	22.99%	135.71%	108.51	102.3	126.41
1987	336,037	270,751	278,784	$22,304,121	$12,182,680	$20,894,508	$1,225,268	$1,151,709	$2,269,308	$5,401,140	$1,390,846	$1,578,203	440.81%	120.76%	69.55%	142.09	104.25	117.59
1988	381,443	260,833	470,339	$25,499,502	$11,457,834	$39,796,414	$1,429,268	$1,015,444	$4,442,394	$2,151,692	$1,136,295	$3,736,912	150.55%	111.90%	84.12%	142.98	104.91	109.8
1989	441,843	283,295	324,942	$42,572,162	$19,497,273	$31,267,904	$2,765,361	$1,682,404	$3,357,984	$1,720,795	$1,643,714	$2,516,217	62.23%	97.70%	74.93%	129.3	104.01	104.58
1990	452,602	280,474	286,805	$38,503,677	$17,184,222	$23,942,082	$2,627,550	$1,609,172	$3,236,026	$2,166,546	$1,185,338	$1,518,201	82.45%	73.66%	46.92%	122.8	100.79	97.31
1991	390,534	261,388	338,905	$22,464,082	$13,295,806	$31,653,580	$2,122,673	$1,390,803	$3,743,455	$1,429,775	$2,422,094	$3,440,362	67.36%	174.15%	91.90%	117.22	106.95	96.62
1992	481,265	238,751	312,619	$29,256,151	$14,038,321	$27,804,959	$2,863,506	$1,504,922	$3,321,580	$6,117,291	$2,800,258	$6,597,921	213.63%	186.07%	198.64%	128.75	113.54	106.97
1993	417,006	233,159	377,033	$28,734,590	$14,571,839	$36,114,031	$3,083,964	$1,837,240	$4,366,657	$1,103,366	$549,442	$2,833,731	35.78%	29.91%	64.89%	118.14	105.82	102.02
1994	236,140	155,868	393,305	$14,392,924	$7,330,851	$30,728,201	$1,647,537	$979,359	$4,389,791	$321,373	$214,070	$1,465,524	19.51%	21.86%	33.38%	112.47	101.89	94.76
1995	241,060	149,172	285,998	$17,347,825	$9,566,497	$28,263,309	$1,872,354	$1,200,005	$3,673,335	$1,648,827	$1,605,684	$4,559,103	88.06%	133.81%	124.11%	110.97	103.62	97.15
1996	313,535	212,269	223,662	$31,698,226	$20,792,568	$27,440,683	$3,485,558	$2,689,858	$3,497,086	$556,929	$795,971	$1,167,384	15.98%	29.59%	33.38%	101.24	95.59	92.56
1997	262,118	195,395	305,515	$24,011,171	$14,601,443	$37,169,416	$2,303,046	$1,748,439	$4,669,884	$336,089	$1,027,786	$1,233,856	14.59%	58.78%	26.42%	95.75	93.16	86.77
1998	276,532	185,548	383,744	$22,159,431	$14,492,667	$44,445,919	$2,029,808	$1,615,843	$5,243,546	$3,883,764	$3,092,809	$4,825,660	191.34%	191.41%	92.03%	100.81	98.8	87.24
1999	307,321	178,554	362,734	$29,722,175	$14,397,616	$41,303,962	$2,592,637	$1,589,926	$4,661,718	$431,724	$259,097	$431,823	[illegible]	16.30%	9.26%	95.48	94.39	81.49

RISK AREA 14

Year	Acres			Risk			Premiums			Losses			Loss/Premium Ratio			Cumulative L/P Ratio %		
	Wheat	Barley	Canola	W	B	C	W	B	C	W	B	C	W	B	C	W	B	C
1978	1,740	5,744	2,001	$70,273	$178,288	$61,589	$10,296	$30,240	$14,879	$1,106	$15,474	$11,944	10.74%	51.17%	80.27%	10.74	51.17	80.27
1979	984	3,830	3,228	$42,932	$127,701	$131,503	$5,022	$20,340	$25,182	$1,532	$21,447	$44,154	30.51%	105.44%	175.34%	17.22	73	140.03
1980	2,685	7,427	1,676	$144,007	$287,757	$77,320	$20,148	$47,494	$14,422	$16,786	$70,607	$16,754	83.31%	148.67%	116.17%	54.77	109.64	133.72
1981	2,879	8,710	830	$165,849	$417,118	$40,756	$20,449	$66,404	$7,426	$669	$7,721	$3,919	3.27%	11.63%	52.77%	35.93	70.07	124.01
1982	2,409	7,833	1,767	$149,858	$430,709	$103,630	$19,417	$62,556	$15,799	$11,804	$47,128	$12,717	60.79%	75.34%	80.49%	42.34	71.52	115.16
1983	2,737	7,768	2,292	$182,820	$462,884	$124,423	$25,028	$95,164	$27,590	$50,001	$91,032	$6,036	199.78%	95.66%	21.88%	81.6	78.65	90.72
1984	1,649	8,328	3,110	$111,601	$503,932	$184,918	$17,218	$84,937	$41,291	$6,188	$25,055	$3,346	35.94%	29.50%	8.10%	74.92	68.4	67.45
1985	2,713	10,675	3,450	$194,927	$671,991	$237,583	$30,096	$107,845	$57,543	$15,468	$43,631	$11,260	51.40%	40.46%	19.57%	70.12	62.55	53.95
1986	1,711	11,787	3,107	$128,071	$688,943	$206,094	$16,353	$101,184	$45,469	$5,667	$29,505	$23,189	34.65%	29.16%	51.00%	66.59	57.06	53.41
1987	1,945	10,827	2,108	$125,153	$412,626	$114,822	$11,655	$44,548	$18,471	$5,883	$10,287	$1,916	50.48%	23.09%	10.37%	65.52	54.77	50.45
1988	1,891	9,153	4,996	$116,446	$364,105	$308,568	$9,747	$31,071	$48,378	$0	$1,702	$2,864	0.00%	5.48%	5.92%	62.07	52.56	43.64
1989	4,011	10,851	2,300	$383,916	$740,716	$194,007	$26,976	$59,574	$24,808	$62,912	$150,388	$50,323	233.21%	252.44%	202.85%	83.81	68.41	55.21
1990	2,861	9,264	2,080	$270,872	$645,880	$134,981	$25,327	$63,897	$20,200	$53,638	$84,175	$20,878	211.78%	131.74%	103.36%	97.44	73.37	57.9
1991	2,467	12,083	2,872	$134,599	$651,745	$210,631	$13,870	$77,794	$28,847	$6,239	$40,327	$5,444	44.98%	51.84%	18.87%	94.55	71.49	55.02
1992	2,812	7,280	1,713	$180,903	$437,313	$145,025	$20,857	$53,151	$22,737	$30,220	$80,078	$24,845	144.89%	150.66%	109.27%	98.4	75.94	58.01
1993	2,505	6,270	2,601	$218,991	$415,548	$246,377	$20,010	$41,479	$31,704	$30,171	$30,756	$36,894	150.78%	74.15%	116.37%	101.99	75.87	62.17
1994	1,252	4,549	2,253	$90,682	$268,787	$205,957	$9,742	$31,551	$32,289	$1,219	$36,368	$34,177	12.51%	115.27%	105.85%	99.1	77.09	65.12
1995	624	4,220	3,002	$56,183	$358,560	$378,290	$5,657	$47,127	$57,462	$4,938	$9,785	$68,386	87.29%	20.76%	119.01%	98.89	74.6	70.92
1996	1,092	5,700	2,191	$123,708	$577,994	$289,534	$10,967	$73,147	$40,647	$14,550	$198,742	$113,044	132.67%	271.70%	278.11%	100.05	87.25	85.56
1997	932	5,939	3,970	$109,589	$543,778	$537,233	$8,296	$67,443	$75,364	$4,364	$148,364	$107,756	52.60%	219.98%	142.98%	98.85	94.67	92.21
1998	1,467	5,945	6,169	$148,176	$532,403	$713,168	$13,887	$67,094	$113,223	$25,456	$15,582	$32,439	183.31%	23.22%	28.65%	102.29	90.9	82.79
1999	2,357	4,212	7,420	$302,503	$349,364	$798,661	$27,165	$47,628	$122,112	$0	$6,890	$15,342	0.00%	14.47%	12.56%	94.74	88.15	73.11

RISK AREA 15

Year	Acres			Risk			Premiums			Losses			Loss/Premium Ratio			Cumulative L/P Ratio %		
	Wheat	*Barley*	*Canola*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*
1978	17,098	71,298	69,958	$709,242	$2,225,713	$2,501,634	$93,123	$303,363	$485,764	$64,583	$251,247	$268,706	69.35%	82.82%	55.32%	69.35	82.82	55.32
1979	15,636	65,081	83,585	$710,337	$2,117,766	$3,677,113	$80,831	$256,893	$603,176	$31,908	$182,704	$864,662	39.47%	71.12%	143.35%	55.47	77.46	104.08
1980	41,066	106,823	44,585	$2,256,797	$4,403,953	$2,306,707	$267,709	$550,699	$356,142	$119,715	$145,122	$241,825	44.72%	26.35%	67.90%	48.95	52.12	95.16
1981	35,314	131,136	21,420	$2,377,057	$6,966,224	$1,284,453	$254,956	$818,822	$176,217	$49,027	$97,862	$102,299	19.23%	11.95%	58.05%	38.07	35.08	91.13
1982	34,961	129,080	33,134	$2,618,132	$7,620,839	$2,155,531	$269,496	$818,249	$264,204	$501,622	$427,324	$451,949	186.13%	52.22%	171.06%	79.37	40.18	102.33
1983	41,258	120,802	56,687	$3,349,060	$8,156,417	$3,527,860	$352,789	$1,014,008	$663,245	$264,539	$1,046,629	$678,973	74.99%	103.22%	102.37%	78.2	57.17	102.34
1984	43,307	125,903	72,653	$3,466,555	$8,541,679	$4,780,352	$385,381	$1,036,343	$913,214	$198,511	$384,310	$248,595	51.51%	37.08%	27.22%	72.17	52.83	82.53
1985	35,865	155,801	72,869	$2,990,073	$11,136,476	$5,278,399	$267,393	$1,174,150	$840,058	$460,980	$1,636,875	$477,332	172.40%	139.41%	56.82%	85.76	69.85	77.51
1986	39,242	142,025	96,431	$3,389,005	$9,426,976	$7,144,683	$274,557	$937,248	$1,106,857	$399,382	$289,130	$891,672	145.46%	30.85%	80.56%	93.06	64.56	78.13
1987	31,017	127,820	71,378	$2,228,367	$5,851,435	$4,499,019	$218,432	$583,647	$776,270	$320,786	$355,819	$198,566	146.86%	60.96%	25.58%	97.82	64.28	71.54
1988	48,618	138,171	137,459	$3,314,953	$6,141,093	$10,339,115	$364,62	$556,767	$1,576,052	$127,473	$150,359	$352,620	34.96%	27.01%	22.37%	89.72	61.71	61.55
1989	55,979	154,563	86,925	$5,711,150	$11,246,311	$7,361,717	$580,8	$892,274	$1,045,733	$278,582	$980,151	$706,009	47.96%	109.85%	67.51%	82.61	66.51	62.26
1990	58,050	131,950	84,703	$5,264,467	$8,745,038	$6,548,076	$605,521	$899,581	$977,778	$360,130	$370,258	$812,814	59.47%	41.16%	83.13%	79.12	64.19	64.35
1991	58,218	133,620	99,412	$3,682,472	$7,366,569	$8,528,433	$359,788	$700,510	$1,095,753	$235,755	$1,160,859	$1,206,034	65.53%	165.72%	110.06%	78	70.94	68.95
1992	86,616	145,051	103,750	$6,014,895	$9,091,825	$8,943,257	$608,109	$943,008	$1,313,364	$1,745,422	$1,793,366	$1,715,585	287.02%	190.18%	130.63%	103.51	80.73	75.59
1993	68,692	139,570	132,992	$5,488,823	$9,609,000	$12,581,215	$566,092	$837,062	$1,810,636	$536,869	$499,761	$1,070,387	94.84%	59.70%	59.12%	102.62	79.3	73.46
1994	25,439	77,548	136,557	$1,638,988	$4,057,522	$11,017,046	$206,977	$418,619	$1,865,359	$48,644	$167,379	$778,390	23.50%	39.98%	41.73%	99.78	78.01	69.73
1995	31,300	78,269	94,707	$2,656,171	$5,906,905	$9,963,397	$343,776	$669,870	$1,601,611	$224,181	$463,560	$1,811,440	65.21%	69.20%	113.10%	97.83	77.57	73.71
1996	30,195	95,346	64,436	$3,610,851	$10,168,109	$8,218,058	$448,557	$1,105,259	$1,317,259	$508,862	$1,801,127	$798,308	113.44%	162.96%	60.60%	98.9	84.07	72.79
1997	19,329	87,249	82,953	$2,220,529	$8,111,240	$10,847,573	$258,150	$844,842	$1,749,359	$225,908	$1,452,503	$1,072,559	87.51%	171.93%	61.31%	98.47	88.9	71.81
1998	28,370	91,477	150,092	$2,685,868	$8,327,504	$18,617,921	$317,273	$874,441	$2,894,005	$195,764	$678,320	$830,461	61.70%	77.57%	28.70%	96.83	88.29	66.49
1999	38,239	80,271	148,193	$4,343,190	$7,014,903	$18,322,902	$511,194	$760,126	$2,823,397	$467,495	$306,403	$879,801	91.45%	40.31%	31.16%	96.47	86.15	62.69

RISK AREA 16

Year	Acres			Risk			Premiums			Losses			Loss/Premium Ratio			Cumulative L/P Ratio %		
	Wheat	*Barley*	*Canola*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*
1978	1,529	2,203	2,933	$56,391	$62,674	$92,631	$8,648	$11,850	$22,029	$9,088	$9,899	$15,233	105 09%	83 54%	69 15%	105 09	83 54	69 15
1979	1,295	3,571	3,271	$55,964	$104,627	$131,160	$7,096	$19,085	$28,499	$1,543	$4,757	$30,657	21 74%	24 93%	107 57%	67 52	47 38	90 82
1980	1,724	4,700	3,102	$88,934	$171,142	$149,512	$11,113	$29,969	$28,190	$12,972	$18,937	$20,915	116 73%	63 19%	74 19%	87 88	55 16	84 87
1981	1,772	4,827	773	$107,551	$228,027	$42,679	$12,483	$40,859	$6,961	$6,214	$4,326	$13,534	49 78%	10 59%	194 43%	75 79	37 26	93 77
1982	2,122	4,648	662	$139,995	$232,518	$46,018	$17,261	$42,214	$6,602	$27,936	$27,366	$6,641	161 84%	64 83%	100 59%	102 04	45 34	94 26
1983	2,847	7,023	2,795	$205,679	$461,787	$159,002	$28,054	$76,369	$36,355	$19,826	$21,535	$20,418	70 67%	28 20%	56 16%	91 64	39 4	83 49
1984	2,279	8,308	4,308	$164,498	$550,026	$229,950	$22,752	$77,299	$53,209	$20,482	$32,211	$26,991	90 02%	41 67%	50 73%	91 3	39 99	73 9
1985	2,295	8,379	7,022	$178,543	$535,417	$428,795	$17,108	$66,488	$68,883	$57,958	$152,344	$97,997	338 78%	229 13%	142 27%	125 3	74 53	92 68
1986	2,183	5,615	5,739	$186,884	$326,243	$335,943	$18,813	$47,937	$49,262	$77,620	$7,337	$10,950	412 59%	15 31%	22 23%	163 01	67 64	81 11
1987	1,673	4,551	2,868	$105,466	$153,703	$146,937	$11,314	$19,354	$24,798	$29,265	$18,627	$9,250	258 66%	96 24%	37 30%	170 01	68 92	77 77
1988	1,044	5,417	8,040	$59,157	$186,704	$412,232	$6,903	$21,728	$58,790	$2,468	$0	$1,831	35 75%	0 00%	3 11%	164 27	65 62	66 33
1989	1,799	4,803	4,806	$144,039	$269,179	$307,429	$18,065	$32,171	$35,703	$8,349	$19,047	$18,048	46 22%	59 21%	50 55%	152 4	65 19	64 98
1990	1,076	3,656	2,972	$71,992	$196,362	$202,774	$10,313	$27,002	$32,285	$4,919	$12,227	$19,417	47 70%	45 28%	60 14%	146 71	64 14	64 64
1991	1,204	5,147	4,125	$59,329	$229,045	$304,055	$7,945	$30,135	$48,771	$11,033	$47,205	$70,981	138 87%	156 65%	145 54%	146 4	69 28	72 52
1992	2,366	7,437	5,505	$126,271	$373,976	$419,297	$19,732	$52,168	$79,270	$42,697	$111,044	$193,770	216 38%	212 86%	244 44%	152 74	81 88	96 04
1993	1,559	6,496	6,929	$96,970	$361,384	$570,107	$18,922	$42,852	$113,578	$10,368	$13,438	$38,126	54 79%	31 36%	33 57%	144 91	78 48	85 8
1994	504	3,472	4,685	$24,438	$140,984	$303,566	$5,889	$20,617	$65,096	$1,616	$10,402	$28,088	27 44%	50 45%	43 15%	142 05	77 6	82 14
1995	423	1,837	2,631	$27,005	$106,067	$216,363	$5,121	$13,337	$48,526	$8,368	$9,771	$54,071	163 41%	73 26%	111 43%	142 5	77 52	83 9
1996	796	3,589	1,662	$67,732	$322,215	$165,761	$10,791	$38,353	$33,566	$15,266	$147,043	$74,688	141 47%	383 39%	222 51%	142 45	94 04	89 44
1997	303	2,030	1,215	$24,891	$161,058	$123,727	$3,990	$19,750	$27,559	$4,802	$51,353	$20,818	120 35%	260 02%	75 54%	142 12	98 54	89
1998	375	2,710	4,742	$30,401	$212,732	$468,556	$5,835	$29,878	$103,200	$5,464	$22,651	$23,209	93 64%	75 81%	22 49%	141 06	97 64	81 93
1999	633	2,424	4,193	$51,029	$197,800	$348,841	$10,073	$33,600	$89,123	$11,666	$40,626	$26,440	115 81%	120 91%	29 67%	140 15	98 63	77 54

RISK AREA 17

Year	Acres			Risk			Premiums			Losses			Loss/Premium Ratio			Cumulative L/P Ratio %		
	Wheat	*Barley*	*Canola*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*
1978	3,611	6,598	13,041	$122,708	$180,711	$393,592	$19,850	$30,036	$89,507	$7,453	$20,604	$43,115	37.55%	68.60%	48.17%	37.55	68.6	48.17
1979	1,979	4,500	15,210	$83,386	$128,730	$506,984	$13,403	$21,784	$111,766	$7,619	$18,266	$101,873	56.85%	83.85%	91.15%	45.33	75.01	72.04
1980	6,228	6,022	5,978	$297,609	$210,972	$274,004	$42,060	$34,507	$51,753	$9,692	$2,152	$51,298	23.04%	6.24%	99.12%	32.88	47.52	77.58
1981	7,032	7,193	3,461	$399,489	$330,490	$201,295	$55,924	$54,475	$29,493	$30,307	$49,182	$16,009	54.19%	90.28%	54.28%	41.96	64.06	75.14
1982	8,478	5,431	4,042	$568,477	$263,455	$221,441	$69,024	$41,866	$38,382	$195,642	$7,466	$73,160	283.44%	17.83%	190.61%	125.19	53.47	88.95
1983	16,154	10,701	12,707	$1,092,070	$554,106	$615,711	$188,305	$115,816	$160,888	$329,115	$197,906	$335,189	174.78%	170.88%	208.34%	149.22	99.03	128.82
1984	13,479	14,365	18,502	$907,296	$725,940	$937,570	$168,365	$165,880	$272,158	$242,831	$297,256	$351,876	144.23%	179.20%	129.29%	147.71	127.67	128.99
1985	22,779	16,745	18,379	$1,621,388	$935,311	$1,096,260	$285,565	$208,398	$312,293	$607,352	$383,469	$534,291	212.68%	184.01%	171.09%	169.74	145.12	141.32
1986	19,897	20,507	26,567	$1,393,869	$1,018,823	$1,469,059	$263,601	$231,954	$422,549	$736,625	$294,364	$485,035	279.45%	126.91%	114.79%	195.88	140.45	133.79
1987	20,164	14,008	27,261	$1,133,745	$451,198	$1,223,432	$237,344	$94,978	$341,025	$301,724	$48,983	$198,172	127.13%	51.57%	58.11%	183.73	132.01	119.69
1988	25,371	7,919	25,496	$1,331,798	$241,344	$1,364,113	$312,892	$47,733	$364,581	$52,292	$29,838	$135,202	16.71%	62.51%	37.08%	152.18	128.84	105.96
1989	28,100	9,261	22,136	$2,184,662	$457,494	$1,381,504	$462,817	$87,132	$344,934	$514,424	$148,135	$255,616	111.15%	170.01%	74.11%	143.22	132	101.63
1990	33,520	8,453	13,837	$2,283,661	$3/7,405	$760,769	$442,901	$77,884	$205,954	$272,961	$56,788	$146,795	61.63%	72.91%	71.28%	129.12	128.2	99.36
1991	28,111	4,437	14,904	$1,267,365	$158,950	$885,319	$225,340	$28,820	$156,164	$104,978	$14,740	$138,475	46.59%	51.15%	88.67%	122.44	126.42	98.78
1992	27,063	2,384	10,041	$1,333,732	$91,086	$580,701	$267,248	$17,565	$114,042	$338,205	$8,123	$72,621	126.55%	46.25%	63.68%	122.8	125.3	97.45
1993	14,737	1,885	13,045	$848,281	$80,006	$865,346	$182,668	$16,268	$184,186	$308,697	$14,184	$247,672	168.99%	87.19%	134.47%	125.41	124.81	99.59
1994	4,771	1,703	15,016	$239,940	$62,503	$843,193	$63,083	$15,786	$278,011	$44,119	$11,224	$141,325	69.94%	71.10%	50.83%	124.35	124.15	95.69
1995	4,944	964	7,608	$285,536	$50,025	$520,139	$67,187	$11,397	$151,525	$0	$0	$30,625	0.00%	0.00%	20.21%	121.87	123.07	92.54
1996	5,335	1,615	2,561	$432,380	$100,093	$248,057	$96,253	$23,489	$68,890	$215,150	$64,164	$197,745	223.53%	273.17%	287.04%	124.69	125.73	96.16
1997	2,942	4,552	9,926	$234,579	$262,012	$1,253,505	$54,952	$52,951	$405,585	$39,779	$52,258	$844,733	72.39%	98.69%	208.28%	123.88	124.69	107.24
1998	6,837	2,834	10,407	$445,253	$172,125	$969,505	$103,256	$36,418	$279,298	$84,095	$2,744	$172,650	81.44%	7.53%	61.82%	122.67	121.67	104.35
1999	5,303	2,996	10,317	$460,071	$170,855	$803,545	$126,165	$41,401	$247,943	$10,373	$8,254	$29,248	8.22%	19.94%	11.80%	118.82	118.78	99.39

RISK AREA 18

Year	Acres			Risk			Premiums			Losses			Loss/Premium Ratio			Cumulative L/P Ratio %		
	Wheat	*Barley*	*Canola*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*
1978	14,383	20,316	22,397	$588,402	$634,519	$701,192	$85,612	$97,379	$131,807	$25,981	$87,593	$60,438	30.35%	89.95%	45.85%	30.35	89.95	45.85
1979	12,132	12,142	31,972	$545,915	$326,641	$1,052,913	$72,606	$50,881	$191,685	$5,926	$5,396	$120,074	8.16%	10.61%	62.64%	20.17	62.72	55.8
1980	33,070	20,595	18,893	$1,558,264	$751,565	$763,455	$207,243	$110,971	$135,671	$43,621	$40,560	$61,007	21.05%	36.55%	44.97%	20.67	51.52	52.6
1981	30,533	23,174	10,648	$1,768,434	$1,060,467	$504,762	$220,539	$152,127	$82,439	$98,908	$235,221	$100,274	44.85%	154.62%	121.63%	29.77	89.65	63.11
1982	40,779	27,197	16,509	$2,574,881	$1,290,739	$857,447	$305,423	$169,538	$133,726	$140,897	$64,244	$209,066	46.13%	37.89%	156.34%	35.37	74.54	81.57
1983	50,086	21,574	26,384	$3,477,466	$1,104,897	$1,409,493	$502,208	$188,090	$326,136	$407,459	$239,315	$900,163	81.13%	127.23%	276.01%	51.86	87.43	144.89
1984	39,861	21,461	30,516	$2,692,582	$1,103,894	$1,610,789	$418,471	$200,215	$444,224	$548,509	$273,832	$822,014	131.07%	136.77%	185.04%	70.16	97.62	157.23
1985	61,444	25,915	23,520	$4,371,103	$1,388,161	$1,400,524	$660,010	$263,162	$379,232	$1,358,253	$510,922	$808,703	205.79%	194.15%	213.25%	106.37	118.23	168.87
1986	38,744	31,453	32,412	$2,853,829	$1,541,004	$1,799,637	$478,953	$317,967	$549,939	$1,015,556	$318,941	$1,070,880	212.04%	100.31%	194.73%	123.52	114.56	174.86
1987	49,180	27,755	36,909	$2,856,670	$874,742	$1,704,978	$568,915	$179,374	$503,762	$129,104	$67,949	$219,970	22.69%	37.88%	43.67%	107.22	106.61	151.9
1988	48,725	13,807	30,033	$2,687,582	$404,985	$1,620,402	$593,104	$82,660	$489,907	$51,748	$15,913	$210,636	8.72%	19.25%	43.00%	93.02	102.62	136.06
1989	58,367	15,271	13,870	$4,844,204	$739,398	$903,416	$1,012,060	$135,120	$247,240	$1,340,616	$249,000	$177,309	132.46%	184.28%	71.72%	100.81	108.29	131.66
1990	49,147	16,158	18,252	$3,650,796	$680,291	$889,360	$573,511	$116,410	$260,235	$468,354	$96,328	$222,438	81.66%	82.75%	85.48%	98.88	106.85	128.56
1991	90,790	20,174	33,789	$4,698,239	$734,187	$1,862,236	$748,886	$122,185	$322,267	$133,781	$21,611	$123,519	17.86%	17.69%	38.33%	89.47	101.86	121.63
1992	79,256	12,128	24,032	$4,357,884	$498,884	$1,225,390	$677,898	$91,228	$233,600	$960,393	$50,918	$208,849	141.67%	55.81%	89.40%	94.44	100.02	119.93
1993	60,164	10,085	26,651	$3,553,127	$467,484	$1,537,775	$508,758	$80,481	$322,547	$911,311	$53,579	$422,943	179.12%	66.57%	131.13%	100.08	98.88	120.69
1994	23,564	5,380	31,977	$1,242,324	$189,991	$1,667,839	$206,053	$39,553	$562,891	$88,405	$26,920	$70,956	42.90%	68.06%	12.61%	98.58	98.37	109.25
1995	19,513	5,127	26,803	$1,141,547	$245,947	$1,714,917	$194,410	$45,277	$490,853	$17,217	$3,923	$43,785	8.86%	8.66%	8.92%	96.41	96.71	100.77
1996	21,384	9,044	11,729	$1,689,170	$629,819	$887,950	$260,577	$104,085	$231,330	$566,029	$199,230	$185,525	217.22%	191.41%	80.20%	100.2	100.58	99.98
1997	10,642	10,376	28,546	$863,610	$706,176	$2,592,381	$120,134	$102,249	$598,608	$280,013	$233,972	$895,101	233.08%	228.83%	149.53%	102.1	105.53	104.45
1998	25,703	12,856	36,433	$1,952,240	$931,614	$3,602,473	$282,506	$142,508	$885,007	$67,892	$37,909	$232,090	24.03%	26.60%	26.22%	99.56	101.5	95.25
1999	29,032	9,323	39,047	$2,393,427	$619,379	$3,430,164	$370,708	$106,464	$852,758	$40,215	$37,528	$85,223	10.85%	35.25%	9.99%	95.94	99.06	86.57

RISK AREA 19

Year	Acres			Risk			Premiums			Losses			Loss/Premium Ratio			Cumulative L/P Ratio %		
	Wheat	*Barley*	*Canola*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*
1978	47,854	136,101	112,747	$2,080,471	$4,672,493	$4,473,820	$234,696	$573,691	$722,440	$208,972	$393,220	$294,046	89.04%	68.54%	40.70%	89.04	68.54	40.7
1979	41,380	84,892	131,720	$2,024,937	$2,717,286	$5,598,536	$203,796	$341,277	$858,598	$5,656	$77,505	$607,871	2.78%	22.71%	70.80%	48.95	51.45	57.05
1980	92,226	126,099	87,227	$5,156,394	$5,248,773	$4,724,649	$547,953	$659,873	$677,692	$213,520	$299,418	$188,155	38.97%	45.38%	27.76%	43.4	48.9	48.26
1981	90,790	141,849	57,837	$6,186,991	$7,461,504	$3,545,084	$637,247	$868,755	$451,636	$378,036	$670,309	$568,581	59.32%	77.16%	125.89%	49.65	58.95	61.2
1982	111,277	145,331	72,196	$7,995,285	$8,174,524	$4,371,275	$841,808	$925,725	$582,422	$1,925,950	$799,004	$893,643	228.79%	86.31%	153.44%	110.81	66.47	77.51
1983	203,730	136,789	143,283	$14,647,886	$7,709,397	$8,180,788	$2,224,797	$1,256,520	$1,748,891	$289,190	$513,812	$1,460,729	13.00%	40.89%	83.52%	64.42	59.52	79.6
1984	177,434	150,118	176,977	$12,963,354	$8,484,570	$10,079,097	$1,878,425	$1,388,912	$2,153,860	$1,317,122	$926,182	$1,237,954	70.12%	66.68%	57.48%	66.05	61.17	72.98
1985	226,973	187,191	154,114	$17,840,775	$11,171,050	$10,091,358	$2,366,412	$1,748,694	$1,966,358	$5,083,509	$2,971,643	$3,411,754	214.82%	169.93%	173.5	105.45	85.67	94.55
1986	199,072	185,381	201,885	$15,651,312	$10,083,408	$12,848,567	$2,268,463	$1,713,699	$2,938,375	$5,450,879	$923,019	$2,020,575	240.29%	53.86%	68	132.75	79.92	88.29
1987	189,676	172,605	231,904	$11,778,737	$6,238,151	$12,260,204	$2,192,320	$1,107,141	$2,858,330	$1,524,957	$529,872	$984,025	69.56%	47.86%	34	122.41	76.57	78
1988	210,002	79,538	285,411	$12,431,300	$2,657,217	$18,428,505	$2,464,066	$419,103	$4,079,427	$129,036	$44,917	$502,338	5.24%	10.72%	12.	104.2	74.06	63.92
1989	278,381	107,195	199,783	$24,945,895	$5,957,141	$15,294,766	$4,561,530	$873,275	$3,080,903	$2,615,021	$602,368	$745,210	57.33%	68.98%	24.	93.73	73.68	58.39
1990	255,519	93,731	193,641	$20,765,690	$4,712,339	$14,155,424	$2,971,653	$621,905	$2,857,464	$608,069	$303,646	$1,525,902	20.46%	48.83%	53.40%	84.43	72.45	57.82
1991	263,179	86,450	219,652	$14,537,980	$3,737,081	$17,513,552	$1,703,156	$431,782	$2,726,295	$474,721	$227,089	$778,051	27.87%	52.59%	28.54%	80.59	71.78	54.94
1992	219,443	54,048	176,586	$13,214,808	$2,676,229	$14,563,758	$1,757,588	$303,157	$2,398,881	$1,900,080	$188,938	$2,048,990	108.11%	62.32%	85.41%	82.39	71.57	57.37
1993	167,598	43,501	224,422	$11,129,908	$2,415,294	$19,967,024	$1,224,374	$222,397	$2,777,713	$1,184,377	$135,434	$1,947,302	96.73%	60.90%	70.10%	83.01	71.39	58.44
1994	74,792	29,684	226,619	$4,541,217	$1,396,888	$16,810,264	$602,933	$155,897	$2,873,571	$210,578	$97,740	$686,567	34.93%	62.70%	23.89%	82	71.29	55.66
1995	96,035	26,471	198,896	$6,682,115	$1,574,167	$19,640,513	$821,361	$164,065	$2,900,284	$24,122	$18,077	$535,361	2.94%	11.02%	18.46%	79.8	70.57	52.87
1996	110,053	40,280	134,501	$10,213,352	$3,560,110	$16,089,870	$1,197,666	$372,857	$2,186,960	$1,641,202	$570,461	$2,665,856	137.03%	153.00%	121.90%	82.04	72.75	56.57
1997	92,123	44,924	259,248	$9,245,681	$3,488,590	$36,076,980	$984,034	$350,937	$4,817,183	$702,767	$587,118	$10,250,551	71.42%	167.30%	212.79%	81.71	75.03	73.05
1998	136,609	45,759	285,784	$11,987,212	$3,759,704	$40,122,948	$1,378,522	$376,772	$5,482,600	$1,295,945	$319,541	$4,811,015	94.01%	84.81%	87.75%	82.22	75.28	74.63
1999	178,429	44,632	329,163	$18,539,514	$3,595,860	$42,834,212	$2,282,456	$373,074	$6,498,810	$1,563,975	$492,587	$5,109,153	68.52%	132.03%	78.62%	81.33	76.67	75.08

RISK AREA 20

Year	Acres			Risk			Premiums			Losses			Loss/Premium Ratio			Cumulative L/P Ratio %		
	Wheat	*Barley*	*Canola*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*
1978	6,140	23,810	19,581	$233,647	$748,148	$685,577	$31,207	$114,311	$134,815	$20,473	$136,373	$132,920	65.60%	119.30%	98.59%	65.6	119.3	98.59
1979	6,169	17,176	27,136	$275,084	$494,574	$1,055,023	$34,765	$76,145	$200,177	$504	$62,433	$318,600	1.45%	81.99%	159.16%	31.8	104.38	134.79
1980	20,872	25,253	12,551	$1,048,993	$1,022,313	$599,856	$141,004	$151,400	$107,600	$108,484	$135,139	$106,050	76.94%	89.26%	98.56%	62.55	97.69	125.98
1981	21,948	27,025	9,895	$1,330,899	$1,348,262	$517,106	$173,436	$198,186	$83,665	$48,650	$116,062	$84,035	28.05%	58.56%	100.44%	46.82	83.33	121.92
1982	26,234	25,512	13,597	$1,838,544	$1,314,779	$790,681	$214,437	$179,812	$115,114	$648,416	$454,948	$348,777	302.38%	253.01%	302.98%	138.95	125.71	154.42
1983	81,226	56,973	33,333	$5,388,500	$2,878,815	$1,801,526	$1,003,424	$603,517	$470,710	$143,810	$221,484	$362,985	14.33%	36.70%	77.11%	60.71	85.12	121.7
1984	66,981	49,223	39,025	$4,566,144	$2,607,632	$2,090,392	$778,613	$525,883	$510,230	$495,356	$459,904	$645,725	63.62%	87.45%	126.56%	61.66	85.78	123.22
1985	74,595	49,518	30,577	$5,493,721	$2,770,062	$1,933,635	$834,791	$531,731	$429,224	$1,662,059	$738,218	$632,685	199.10%	138.83%	147.40%	97.39	97.63	128.28
1986	53,598	42,584	39,098	$4,069,430	$2,176,341	$2,405,294	$663,768	$430,270	$598,410	$1,753,356	$291,729	$613,055	264.15%	67.80%	102.45%	125.95	93.06	122.45
1987	48,303	35,455	42,576	$2,883,311	$1,206,467	$2,172,824	$593,971	$244,440	$564,772	$693,896	$181,120	$321,605	116.82%	74.10%	56.94%	124.74	91.55	110.94
1988	45,353	17,768	53,022	$2,471,963	$592,352	$3,250,202	$585,871	$106,585	$832,391	$81,547	$20,341	$268,996	13.92%	19.08%	32.32%	111.89	89.11	94.77
1989	60,805	26,507	32,699	$5,212,671	$1,433,814	$2,407,120	$1,097,299	$241,936	$553,898	$380,456	$178,830	$150,855	34.67%	73.92%	27.24%	98.12	88.03	86.64
1990	53,484	22,634	32,340	$4,324,819	$1,101,014	$2,150,373	$716,812	$201,119	$536,071	$225,528	$98,284	$257,743	31.46%	48.87%	48.08%	91.17	85.84	82.62
1991	60,779	16,577	47,097	$3,251,314	$679,445	$3,252,872	$448,173	$108,509	$522,962	$222,245	$77,895	$149,717	49.59%	71.79%	28.63%	88.62	85.43	77.63
1992	50,980	8,992	35,006	$2,993,058	$394,640	$2,597,239	$421,790	$70,833	$468,191	$665,485	$32,622	$1,140,486	157.78%	46.05%	243.59%	92.39	84.69	90.31
1993	34,151	8,110	50,031	$2,208,057	$390,833	$4,040,944	$344,734	$61,460	$783,684	$473,314	$50,312	$783,862	137.30%	81.86%	100.02%	94.3	84.65	91.41
1994	16,402	3,384	39,615	$1,006,866	$135,911	$2,689,526	$188,877	$26,880	$727,879	$116,188	$8,386	$183,651	61.52%	31.20%	25.23%	93.55	84.28	85.1
1995	20,257	2,783	30,221	$1,346,188	$144,062	$2,550,599	$226,710	$25,354	$599,702	$60,862	$6,998	$137,710	26.85%	27.60%	22.96%	91.78	83.91	80.58
1996	20,964	4,944	23,699	$1,818,758	$384,705	$2,262 491	$292,605	$57,275	$462,930	$464,648	$168,122	$594,744	158.80%	293.53%	128.47%	94.01	86.94	83.13
1997	9,895	12,043	28,615	$953,341	$889,450	$3,404,193	$143,911	$130,085	$687,151	$65,166	$270,814	$919,081	45.28%	208.18%	133.75%	93.22	90.8	86.83
1998	16,869	10,151	45,521	$1,305,908	$715,924	$5,416,049	$191,558	$101,724	$1,071,005	$91,286	$116,631	$801,699	47.65%	114.65%	74.85%	92.27	91.38	85.61
1999	25,885	9,639	59,367	$2,463,481	$671,260	$6,638,637	$346,222	$113,498	$1,410,369	$42,799	$103,400	$532,197	12.36%	91.10%	37.73%	89.35	91.38	79.92

RISK AREA 21

Year	Acres			Risk			Premiums			Losses			Loss/Premium Ratio			Cumulative L/P Ratio %		
	Wheat	*Barley*	*Canola*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*
1978	4,739	19,343	26,573	$190,379	$648,745	$982,554	$26,161	$92,804	$187,628	$39,087	$107,016	$136,556	149.41%	115.31%	72.78%	149.41	115.31	72.78
1979	5,428	13,378	26,074	$242,425	$412,013	$1,036,334	$31,143	$59,560	$195,576	$2,238	$1,302	$96,326	7.19%	2.19%	49.25%	72.12	71.09	60.77
1980	15,672	26,712	23,021	$785,148	$1,052,546	$1,172,786	$108,594	$161,753	$211,807	$24,694	$50,884	$120,318	22.74%	31.46%	56.81%	39.79	50.68	59.36
1981	13,521	31,254	13,531	$814,462	$1,589,934	$771,107	$103,910	$226,240	$125,940	$61,379	$118,464	$76,834	59.07%	52.36%	61.01%	47.22	51.39	59.65
1982	12,497	23,347	14,451	$831,784	$1,211,907	$855,479	$102,016	$159,642	$140,136	$180,387	$253,122	$300,835	176.82%	158.56%	214.67%	82.78	75.83	84.88
1983	23,073	33,536	43,679	$1,588,698	$1,712,264	$2,288,844	$260,602	$319,235	$576,527	$17,496	$65,391	$476,310	6.71%	20.48%	82.62%	51.43	58.49	83.97
1984	25,277	32,887	50,544	$1,726,318	$1,718,376	$2,604,791	$276,031	$318,502	$622,306	$414,785	$320,423	$1,216,292	150.27%	100.60%	195.45%	81.46	68.52	117.65
1985	36,423	45,604	41,988	$2,643,795	$2,502,040	$2,667,746	$396,664	$455,426	$625,159	$986,390	$794,449	$942,723	248.67%	174.44%	150.80%	132.28	95.42	125.37
1986	29,472	44,858	48,420	$2,144,838	$2,254,403	$3,033,289	$351,655	$433,424	$805,186	$1,200,551	$467,045	$1,254,330	341.40%	107.76%	155.78%	176.67	97.82	132.38
1987	22,191	35,340	46,265	$1,314,718	$1,159,572	$2,311,009	$266,149	$224,543	$620,797	$201,087	$212,403	$422,689	75.55%	94.59%	68.09%	162.67	97.53	122.67
1988	18,080	16,537	47,346	$989,323	$514,629	$2,795,917	$223,250	$98,227	$745,307	$48,672	$89,589	$993,791	21.80%	91.21%	133.34%	148.02	97.28	124.31
1989	30,100	25,208	29,104	$2,444,696	$1,255,209	$1,997,605	$543,227	$229,494	$531,148	$378,931	$189,776	$127,046	69.76%	82.69%	23.92%	132.21	96.08	114.41
1990	96,172	81,642	66,527	$6,985,523	$3,833,325	$3,834,342	$1,453,926	$803,374	$1,031,302	$234,303	$171,186	$363,835	16.12%	21.31%	35.28%	91.47	79.31	101.7
1991	102,749	69,262	77,551	$4,858,807	$2,661,786	$4,779,458	$826,004	$432,062	$777,156	$380,485	$227,293	$305,118	46.06%	52.61%	39.26%	83.92	76.44	94.96
1992	77,384	37,765	62,870	$4,216,805	$1,740,000	$3,956,228	$799,572	$302,145	$703,939	$1,387,427	$332,989	$988,445	173.52%	110.21%	140.42%	96.34	78.8	99.01
1993	71,370	30,220	87,576	$4,443,679	$1,529,552	$6,171,766	$725,650	$233,536	$1,238,277	$1,053,600	$126,191	$595,999	145.19%	54.03%	48.13%	101.8	77.53	92.11
1994	29,356	13,193	84,265	$1,764,085	$555,474	$5,439,944	$336,075	$101,529	$1,493,807	$307,582	$30,037	$576,058	91.52%	29.58%	38.56%	101.3	76.48	84.59
1995	21,839	11,674	70,934	$1,468,616	$589,466	$5,683,553	$294,674	$117,829	$1,460,101	$255,403	$72,943	$689,562	86.67%	61.91%	47.23%	100.69	76.12	80.08
1996	16,478	21,445	44,823	$1,423,568	$1,791,268	$4,502,394	$286,730	$328,018	$1,084,006	$136,840	$220,355	$779,571	47.72%	67.18%	71.92%	98.64	75.55	79.41
1997	15,340	24,376	75,581	$1,249,815	$1,690,935	$8,361,739	$220,050	$284,747	$1,806,166	$167,431	$302,210	$2,540,593	76.09%	106.13%	140.66%	97.99	77.16	86.79
1998	27,820	29,020	97,816	$2,027,430	$2,102,007	$10,888,700	$391,671	$346,587	$2,352,556	$517,502	$523,935	$2,825,163	132.13%	151.17%	120.09%	99.66	81.64	91.31
1999	48,114	31,141	91,949	$4,330,531	$2,201,705	$10,387,878	$832,488	$375,240	$2,418,809	$247,012	$145,814	$1,109,040	29.67%	38.86%	45.85%	93.08	79.01	85.74

RISK AREA 22

Year	Acres			Risk			Premiums			Losses			Loss/Premium Ratio			Cumulative L/P Ratio %		
	Wheat	*Barley*	*Canola*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*	*W*	*B*	*C*
1978	7,394	23,129	39,540	$301,102	$675,670	$1,296,151	$39,028	$98,293	$245,373	$84,946	$219,278	$221,972	217.65%	223.09%	90.46%	217.65	223.09	90.46
1979	6,065	17,264	40,073	$283,856	$501,453	$1,523,967	$36,780	$76,366	$285,865	$25,864	$28,276	$212,701	70.32%	37.03%	74.41%	146.17	141.74	81.82
1980	22,498	37,729	39,990	$1,202,862	$1,418,508	$2,000,509	$172,050	$233,927	$368,551	$145,128	$117,130	$251,565	84.35%	50.07%	68.26%	103.26	89.26	76.27
1981	21,270	48,946	25,498	$1,303,755	$2,382,336	$1,341,890	$170,394	$377,521	$222,420	$62,489	$299,846	$221,069	36.67%	79.42%	99.39%	76.13	84.53	80.85
1982	27,840	43,299	32,693	$1,914,134	$2,358,320	$1,799,603	$232,142	$334,647	$286,351	$992,642	$1,315,749	$1,291,296	427.60%	393.18%	450.95%	201.58	176.69	156.09
1983	112,640	119,023	106,242	$7,657,692	$5,762,525	$5,531,588	$1,310,180	$1,132,756	$1,373,962	$297,973	$325,382	$656,826	22.74%	28.72%	47.81%	82.07	102.31	102.62
1984	96,857	116,549	147,626	$6,559,714	$5,837,566	$7,717,107	$1,054,750	$1,095,705	$1,779,499	$669,386	$1,082,814	$1,463,171	63.46%	98.82%	82.22%	75.56	101.17	94.66
1985	117,725	141,810	114,612	$8,504,275	$7,701,178	$6,772,090	$1,237,276	$1,378,066	$1,440,892	$4,301,158	$3,680,517	$2,961,271	347.63%	267.08%	205.52%	154.72	149.54	121.27
1986	118,671	121,002	140,319	$8,484,284	$6,043,859	$8,051,732	$1,369,182	$1,170,558	$1,996,404	$2,751,658	$753,003	$2,719,459	200.97%	64.33%	136.22%	165.98	132.62	125
1987	105,975	114,595	110,992	$5,996,182	$3,754,060	$5,165,239	$1,170,386	$732,285	$1,336,926	$876,692	$315,384	$730,581	74.91%	43.07%	54.65%	150.29	122.73	114.93
1988	94,445	68,033	128,687	$5,096,034	$2,145,111	$7,122,238	$1,095,606	$397,442	$1,794,365	$122,928	$51,392	$428,043	11.22%	12.93%	23.85%	130.97	116.52	100.25
1989	107,687	93,733	86,212	$8,871,276	$4,968,996	$5,575,174	$1,720,194	$816,242	$1,304,219	$490,902	$257,371	$330,141	28.54%	31.53%	25.31%	112.63	107.68	92.39
1990	64,405	20,344	49,148	$4,658,370	$912,845	$2,832,572	$618,209	$133,412	$552,720	$240,751	$96,430	$154,805	38.94%	72.28%	28.01%	108.18	107.09	89.65
1991	56,003	13,725	51,927	$2,750,512	$521,214	$3,226,376	$350,438	$69,917	$504,678	$82,934	$20,782	$269,857	23.67%	29.72%	53.47%	105.38	106.41	88.29
1992	53,788	7,464	43,452	$2,905,263	$305,148	$2,770,339	$409,136	$41,970	$489,232	$1,022,407	$100,876	$677,445	249.89%	240.35%	138.47%	110.76	107.11	90.05
1993	39,253	8,761	59,615	$2,380,648	$395,822	$4,057,241	$398,410	$67,763	$800,675	$345,499	$103,101	$511,034	86.72%	152.15%	63.83%	109.92	107.48	88.63
1994	12,605	2,260	48,913	$710,678	$87,182	$2,904,351	$141,445	$16,960	$761,666	$87,831	$7,877	$141,209	62.10%	46.44%	18.54%	109.33	107.36	85.19
1995	15,030	3,402	42,527	$947,870	$169,957	$2,935,725	$153,752	$30,446	$617,369	$26,761	$4,100	$55,124	17.41%	13.47%	8.93%	108.12	107.01	82.28
1996	16,574	2,368	30,671	$1,283,659	$135,965	$2,495,202	$196,771	$22,092	$471,291	$1,986	$3,813	$32,295	1.01%	17.26%	6.85%	106.35	106.77	80.14
1997	24,276	7,499	37,060	$1,760,470	$379,601	$3,264,645	$213,504	$55,744	$536,904	$44,949	$71,828	$486,636	21.05%	128.85%	90.64%	104.84	106.92	80.47
1998	20,985	8,847	35,112	$1,423,129	$506,278	$3,161,718	$157,713	$60,007	$509,113	$45,881	$5,359	$381,922	29.09%	8.93%	75.02%	103.87	106.21	80.31
1999	28,886	5,656	35,759	$2,305,914	$308,888	$3,225,380	$242,483	$36,778	$507,387	$35,613	$3,241	$20,636	14.69%	8.81%	4.07%	102.13	105.78	78.19